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ORIGINAL ARTICLES

MEANS FOR THE ACCURATE DETERMINATION OF HUMAN INTERNAL PARASITES *

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Hardly half a century has elapsed since the pioneer investigations of Pasteur, Virchow and their confrères laid the foundations of bacteriology. Within this short period a science has been built up and a multitude of workers drawn into its service. Methods of technic have been developed, means for the differentiation of germs, and for the positive determination of their relation to disease worked out, and processes evolved for limiting the activity or destroying the life of disease-producing organisms, and for utilizing the activities of those species which are helpful to man in one way or another. The splendid results achieved in this field, especially in the cure and prevention of disease, have served to obscure the well recognized fact that bacteria are not the only disease-producing organisms.

Within very recent years, however, the discovery of important causes of disease in the animal field has accentuated the need of some reliable basis in knowledge or technic for diagnosing accurately the animal organisms related to disease. Such a determination falls within the field of clinical microscopy and constitutes an evidently important section of that field. In spite of its importance, however, this study has been seriously neglected and men of scientific training and habits have been contented with a rough approximation or even with a guess at the character of parasitic material which has presented itself in the course of clinical examinations.

How scanty the knowledge of this field and how low the standards which seem to satisfy even the better class of workers is evidenced by

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the publication recently in one of our foremost medical pournals of a cut representing the seat worm of man (*Oxyuris vermicularis*), which would not be accepted from a freshman in any reputable college course in zoology. Now an atrociously poor figure of this well-known parasite is indeed only a sad comment on the standards of author and editor, for it will hardly lead to erroneous diagnosis or faulty treatment. But in many cases the reverse is true. Errors in observation and delineation, faulty descriptions of structure and incorrect measurements, have resulted in confusing forms of very different clinical importance and in concealing the presence of new and dangerous human parasites.

The history of the hookworm in this country is a striking instance of another serious phase of the situation, namely, the lack of attention to the possible presence of parasitic organisms, which is, of course, even more fatal than lack of accuracy in their determination. But that may be regarded as a passing phase of the medical situation. Many are already fully alive to the possibilities in unexplained etiology and are searching diligently for an explanation in the form of some unrecognized parasite, either animal or plant. We need then to seek to furnish the correct data for use in diagnosis rather than to devote our time to laying further emphasis on the need of searching carefully for evidence of animal parasites in all cases. It has been in part no doubt the lack of such data which has necessitated the general diagnosis of "worms," when a determination of the particular species would have been more to the point. Moreover, the unfamiliarity with such organisms and the criteria for distinguishing them from each other and from extraneous substances has certainly led to frequent misinterpretation of harmless residual food materials as dangerous parasites, or vice versa, to the failure to recognize parasites which were abundant and significant. To sum up then this phase of the discussion: The physician must first of all look for parasitic organisms of the animal type as well as those of plant nature, and in the next place it is equally important that he be able to determine the nature of the material that comes within his notice.

How may this be done? Evidence of the presence of parasites will be obtained by an examination of the blood, the sputum, the urine, or the feces. The first three are frequently examined to-day in the diagnosis of disease and furnish only rarely any evidence of parasites. In the blood one may find the malarial organism (*Plasmodium*) of several species, flagellate organisms (*Trypanosoma*) or larval nematodes (*Microfilaria*); the first is well known, the second and third occur only in those rare cases where visitors to infected tropical regions have acquired the parasites and have brought them back to uninfected temperate regions. In the sputum one may find the eggs of the lung fluke, thus far known in this country only in a few Chinese, Japanese or Corean immigrants who have brought the infection with them. In the urine the Egyptian blood fluke is of equally rare occurrence in this country, although one unconfirmed record of its presence in a native of Illinois who had never been out of the state and its immediate vicinity points to an unfortunate error in determination or a serious condition heretofore unrecognized.

If I may depend on the opinions of physicians of wide acquaintance and good knowledge of conditions, it would be justifiable to say that fecal examinations are made in a few hospitals only and outside are rarely thought of. Taking into account the length and breadth of this state and of the great central west, I am inclined to regard this opinion as correct. Now it is unfortunate that fecal examinations are made so rarely since they furnish the most frequent evidence of parasitism. They are not difficult to make and can be carried through by the ordinary practitioner. Something regarding the technic of the process and the comparative value of different methods may be learned from a recent government publication.[1]

In reaching a determination regarding the nature of the material which presents itself the physician has to deal with a purely microscopical problem. The essential data are obtainable only with the microscope and yet it should be remembered that they are easily obtained. Unlike the study of bacteria they do not demand any complicated technic, the use of high powers and difficult manipulations, or time-consuming cultures and involved treatment of the material. Determinations are most readily made from fresh material; they are rapidly made and require relatively low magnification. The repetition of the observation, even for several times, is naturally advisable if one is to avoid the evident dangers incident to errors of various sorts. Chance may make the first preparation very unusual or may present items in a peculiar light which further examination will enable the student to explain. But generally speaking the evidence is easily obtained and easily evaluated provided only the observer has a table of true values for comparison. A consideration of the items concerned will establish a table of true values and make my position clearer.

But before proceeding to consider that question a word of further explanation may be necessary. Because I have maintained that the determination of animal parasites is relatively easily made, it must not be inferred that the matter presents no difficulties. There are troubles here as well as elsewhere. But to be forewarned is to be forearmed, and some of the most serious difficulties prove trifling when proper precautions are taken in meeting them. It is hardly necessary to emphasize before such an audience as this the absolute necessity of determining beyond the shadow of a doubt the actual source of the material under consideration. Even a trained observer may be deceived and the ordinary man finds pitfalls everywhere. The cases of deceit are so frequent that every physician is on his guard to meet them, especially in patients of certain mental types. But the literature of science is full of instances in which highly trained specialists have been led astray and these few words of caution are not uncalled for even here. Extraneous material is introduced easily into containers or even forced into the body and evacuated at stool so that all statements regarding the source of the

1. Hall, M. C.: Bull. 135, Bureau of Animal Industry, 1911.

reputed parasites must always be scrutinized carefully. Granting, however, that the material in question came from the patient legitimately and had not been contaminated since it was evacuated, it is even yet not certain to be what it seems, and failure to proceed carefully at this point may involve the observer in serious trouble.

The varied contents of the human intestine, even in the individual who is mentally sound, are such as to provoke astonishment when examined carefully and listed accurately. A large per cent. of the supposed "finds" are in fact items of interest, but not of etiologic importance. For diagnostic purposes their accurate determination is fully as important as if they were really the cause of disease. I refer in the first instance to the class of objects ordinarily grouped together as pseudo-parasites although their varied nature entitles them to more accurate grouping under several headings. They are constant pitfalls even for the expert microscopist and their universal occurrence entitles everyone to examine any new material with the distinct subconscious feeling that things are not what they seem and even the careful student is sure to be trapped if only he continues long enough in the work of examining for parasites.

The first group of pseudo-parasites which demands attention consists of real animals, usually living and often even of the same general type as one finds parasitic, but in this instance only apparently of such habit. A fish nematode taken from a hollow tooth, was in reality no true parasite of man but a stray form, ingested with food and deposited by chance in this spot during the act of chewing. Other small nematodes, found in the vomit of a Russian, were in fact living in or on the onions he had eaten in too great abundance and were of no significance in connection with the troubles under which he labored. The well known round worm, popularly designated a hair snake, has been both vomited and passed *per anum* in many cases from both Europe and North America. It is actually a free-living animal in the adult form in which it has been found in these cases and its presence in the human alimentary canal is more unfortunate for the worm than for the host; it can neither continue to exist there nor do any harm while in that location. Yet it has been supposed to be the cause of most serious difficulties and in one case at least interpreted as the famous Guinea worm of the East. Earthworms are among the common items reported from man, as positive and normal inhabitants of the human digestive system. Such material has frequently been sent me from various parts of the central west; and recently I received from a former student and friend, now a medical missionary on the Persian Gulf, specimens of a sea-worm much like our earth-worms which he thought was an actual parasite and the cause of serious trouble in a boy under his care. It is impossible that such a delicate skinned species, adapted to a free existence in such a multitude of ways, could be parasitic in man, and in fact could ordinarily resist digestion by human alimentary secretions. The well known experimental

habits of children will explain the presence in the stomach of such specimens,[2] while in other cases careless consumption of partly decayed food containing fly maggots, beetle larvæ, or even grubs of moths will suffice to show how such forms have gained access to the human system. Of course, the thick-skinned myriapods, or thousand-legged worms, will resist digestion long enough to be carried unharmed through the canal and appear in the feces; their presence, especially if the feces are somewhat fluid, will attract attention and the unusual character of the find will readily justify the conclusion that they are the cause of the trouble. Small leeches or even others of some size may be swallowed by accident in drinking and appear later in the false rôle of a human parasite. Cheese mites, found living in stomach contents and dead, but not disintegrated, in fecal material, are easily explained; but unfortunately they may be discovered by those who are not familiar with the appearance of such organisms and may lead the discoverer to radically false conclusions since such species cannot assume the rôle of human parasites even for a brief period. The occurrence of such forms in the urine is not so easily explained. And yet even if the source of the material is established beyond peradventure, one may doubt whether the condition is less exceptional than the discovery of a colony of detricolous sarcoptid mites in a painless tumor of the testicle in a well known case in France. The species had reached an unusual location in some accidental manner and had found it possible to maintain its activities and even to multiply in this strange environment. They are no doubt one stage nearer true parasitism than the purely free-living species which were mentioned above, but are not to be counted among the true parasites of man.

The list of living animals to which has been ascribed a parasitic habit, but which are properly to be classed as pseudo-parasites, might be almost indefinitely extended. Among such one must list the book-scorpion (*Chelifer cancroides*), the common clothes moth (*Tineola biselliella*) and many fly larvæ or maggots, although the moth larvæ probably dropped accidentally from the lower side of a mattress into the vessel and were not voided with the urine as reported by the patient.

Such pseudo-parasites are by no means all higher forms such as those listed in the preceding paragraphs. Free-living species of protozoa have been reported as human parasites and their true nature discerned only after some study. Cobbold has discussed a case of this type in which the pseudo-parasites were psorosperm sacs, and Manson has recently described a case due to *Chilodon uncinatus*. The classic instance is undoubtedly that of Schaudinn, the discoverer of *Treponema pallidum*, who followed experimentally the life cycle of a delicate, typical pond-inhabiting rhizopod (*Chlamydophrys stercorea*) when introduced into the human alimentary canal. This species is often abundant in feces, but the source is drinking water containing the encysted spore stages and the species never assumes parasitic habits, even temporarily.

2. I am informed by my colleague, Dr. J. W. Folsom, that he has seen certain of the bait-diggers on the South Boston tide flats eat such worms. It is not unlikely that poorly chewed pieces might pass through the canal only slightly changed, especially at times of digestive disturbances.

Not all pseudo-parasites are living animals, introduced by accident into the alimentary canal and thus coming into notice when its contents are subject to examination. Many pseudo-parasites are of plant origin. One of the most frequent of these is composed of partly digested banana fibers which simulate small tape-worms marvelously well. The first notice of these I have found was published in Boston in 1883, and they have been rediscovered periodically every few years in different sections of the country. Lycopodium spores in urine and feces have been reported often as eggs of parasites. Rust spores and pollen grains have achieved similar notoriety and the seed corn of *Morus nigra* has been duly baptized as a parasitic worm. Various plant fibers and partly digested masses of plant parenchyma or of other tissues such as the pulp vesicles of oranges or grape fruit have been diagnosed microscopically as tape-worms or flukes. Of similar source, i. e., from the food of the host, come the lingual ribbons of snails, reported as peculiar parasites in France several times within recent years. A friend brought me one day a small round worm from the fish he might have eaten, but did not. Undoubtedly it would have withstood digestion and under other circumstances have been the subject of a communication announcing the discovery of a new human parasite. There is no probability that it could have adapted itself to life in the human system, or have become a true parasite of man, even if swallowed uninjured.

Even parts of the body itself have been interpreted as parasites. Thus a vestigial remnant of the *Arteria hyaloidea* has been frequently mistaken for an eye-worm, and its movements in the posterior chamber of the eye as viewed through the ophthalmoscope are said to be a most realistic copy of the twisting and untwisting of a round worm. A fibrinous clot has been taken for a blood worm and only a year ago I had an undoubted clot sent me which had been passed with urine and from its striking form confidently interpreted as a kidney worm. Hydatid moles and pedunculated cysts have often been diagnosed as bladder worms.

It is important to have clearly in mind these non-pathologic elements frequently found in making fecal examinations in order to avoid confusing with them the objects of real pathologic significance which occur side by side with them in the material examined. Accordingly I may be pardoned for having dwelt so long on that phase of the subject and will now pass to consider what actual parasites one may find and how their true nature may be determined. The element of movement is a most important criterion in deciding what is a parasite and what an artefact of some sort. A determination of parasitic amebæ, which, by the way, requires a somewhat higher magnification and is moreover one of the most difficult problems that confront the clinical microscopist, must never be made unless the questionable bodies manifest motion. Epithelial cells make fine amebæ, and motionless bodies, however much like the real thing, must always be rejected as insufficient to prove the presence of amebæ in the intestine. The real amebæ will sooner or later be found moving and diagnosis on any other basis is absolutely unsafe. But the diagnosis of intestinal protozoa is a matter even yet little understood and difficult at

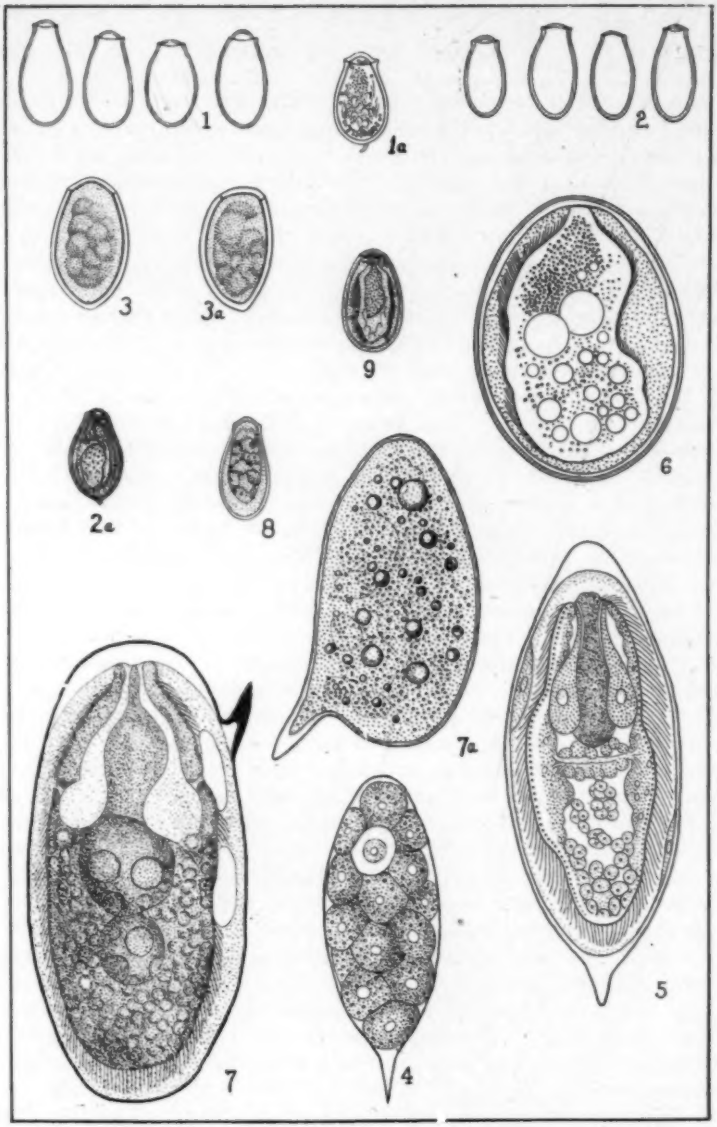

PLATE I.

Fig. 1.—*Clonorchis sinensis.* The chief forms presented by the eggs, each egg taken from a separate specimen of the worm. After Looss, 1907, Pl. IX, Fig. 7.

Fig. 1a.—Egg of *Clonorchis sinensis.* After Ijima, 1887, Pl. VII, Fig. 3.

Fig. 2.—*Clonorchis endemicus.* Eggs figured in the same manner and under exactly the same enlargement as in the preceding drawing so as to allow of comparison. After Looss, 1907, Pl. IX, Fig. 8.

Fig. 2a.—Egg of *Clonorchis sinensis.* After Ijima, 1887, Pl. VII, Fig. 3.

Fig. 3.—Egg of *Dicrocœlium lanceatum* in surface view. After Braun, 1902, p. 168.

Fig. 3a.—The same in lateral aspect.

Fig. 4.—*Schistosoma hematobium;* egg from uterus of female worm, occasional only in feces and then generally calcified. After Looss, 1905, Pl. IX, Fig. 8.

Fig. 5.—*Schistosoma hematobium;* normal egg from urine. After Looss, 1905, Pl. IX, Fig. 7.

Fig. 6.—*Schistosoma japonicum;* egg from fresh feces. After Katsurada, 1904, Pl. VII, Fig. 1.

Fig. 7.—*Schistosoma mansoni,* showing the lateral-spined egg with the miracidium. The different structures are shown diagrammatically. After Holcomb, 1907, p. 66, Fig. 3.

Fig. 7a.—*Schistosoma hematobium;* abnormal (?) egg from feces. After Looss, 1905, Pl. IX, Fig. 9.

Fig. 8.—Egg of *Opisthorchis felineus.* After Braun, 1902, p. 158.

Fig. 9.—Egg of *Heterophyes heterophyes.* After Looss, 1896, Pl. V, Fig. 39.

best. We do not know even generally what forms occur in the human host, how they may be differentiated from each other or what rôle they play in the host organism. So I may be permitted to leave this entirely unsolved problem and turn to other groups concerning which some definite statements can be made. These are the long known and more carefully studied parasitic worms.

The larger types of parasitic worms have been known since the very beginning of medical history. Tape-worms and their pumpkin-seed shaped segments, as well as bladder-worms are recorded in the earliest medical writings, even though the relationship of these different structures was not suspected then or demonstrated finally until the nineteenth century, A. D. Round worms were also known in the ancient days and records of flukes are nearly as old. The modern student often repeats the common error of his predecessors when he identifies the separately discharged segments of tapeworms as flukes on account of their active and independent movements. Ordinarily, however, difficulties do not arise in dealing with these larger forms which are infrequent and also growing more so. The increase in knowledge regarding parasites has added to the list of human species many minuter forms, like the hookworm, or the rat tape-worm; these are found only on careful examination, and yet offer no especial difficulties in determination.

Embryos of parasites are rarely encountered in fecal examinations. They are minute and recognizable only on microscopical examination. When present one would also find in all probability the ruptured egg shells from which they had come, and also unbroken shells still containing embryos, so that these cases also reduce themselves to the problem of determining the eggs of parasites. This is the topic of the next section of this paper, but before passing to consider that I should call attention to the fact that one species, *Strongyloides stercoralis*, the reputed cause of chronic intestinal flux in the East where it occurs often in association with the hookworm, appears normally only in the embryonic form since the eggs hatch out before the feces which carry them reach the external world. This species has been reported a few times in the United States, first by Thayer of Johns Hopkins. The embryos have pointed tails, round heads and a double esophageal bulb in the posterior section of which are contained three teeth. The embryos measure 0.2 to 0.3 mm. in length by 0.013 mm. in width and swim about in the fluid feces with great activity. The eggs which occur usually in strings of three or four can be found in the feces only after the administration of a powerful cathartic. The embryos will probably be easily recognized as such. Other nematode embryos occur normally in the blood and rarely in glandular secretions. Such embryos are those of the various filariæ, known in the immature form as microfilariæ. They are very rare in this part of the world, though common in the tropics and subtropics, and are difficult to distinguish because of great structural simplicity. The embryos of the trichina have been observed in this country several times in recent years in blood examination, and here also one finds no eggs; the species is viviparous and as the embryos are discharged into the lymph or blood-stream they

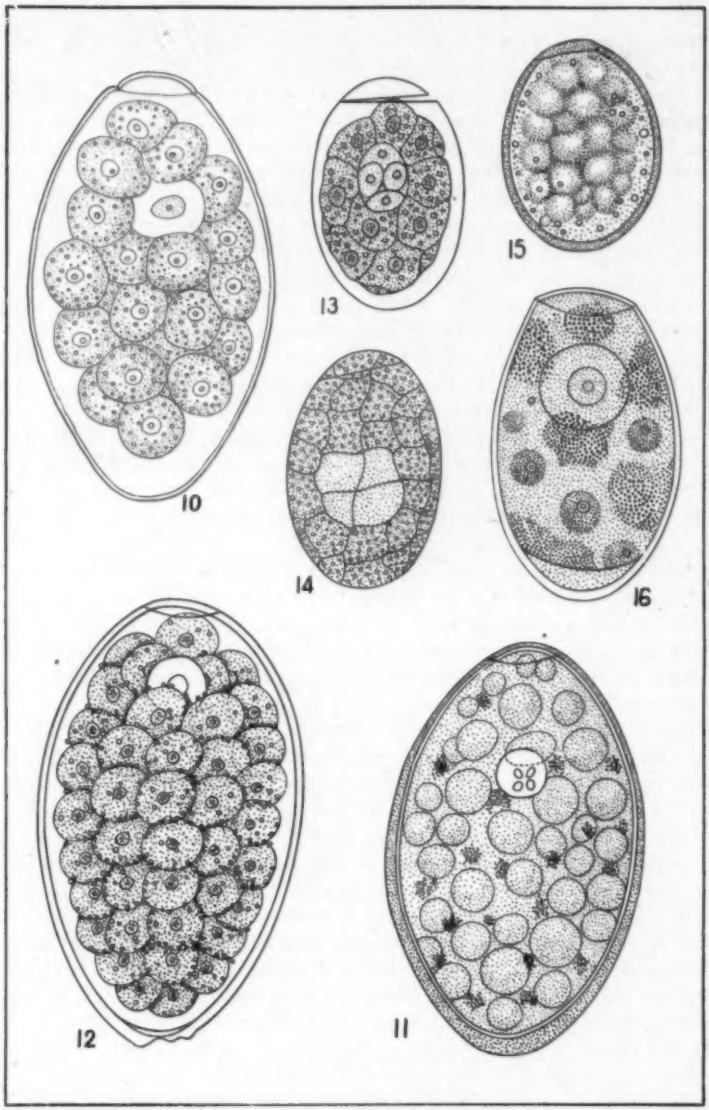

PLATE II.

Fig. 10.—*Fasciolopsis buskii;* egg from uterus of full-grown worm. After Looss, 1905, Pl. IX, Fig. 4.

Fig. 11.—Egg of *Fasciola magna.* After Stiles, 1894, p. 227, Fig. 4. This figure is drawn to the minimum, not to the average size of ova, in this species.

Fig. 12.—Egg of *Fasciola hepatica.* After Sommer, 1880, Pl. VI, Fig. 1c.

Fig. 13.—Egg of *Dibothriocephalus latus* with operculum opening. After Schauinsland, 1886, Pl. VII, Fig. 31.

Fig. 14.—The same, earlier stage. After Schauinsland, 1886, Pl. VII, Fig. 29.

Fig. 15.—Egg of *Diplogonoporus grandis* taken from the uterus. After Ijima and Kurimoto, 1894, Pl. XVIII, Fig. 9.

Fig. 16.—Egg of *Paragonimus ringeri* from sputum of man. After Katsurada, 1900, p. 507.

cannot be found in fecal examinations. At most and indeed very rarely one may find adults of this species in feces.

The most frequent evidence of parasitism secured by fecal examination is the presence of eggs which are not difficult to recognize as such. The further diagnosis of the material depends on careful observation of peculiarities of individual species. At first glance all of a group look much alike and a short experience will enable the observer readily to classify the egg under observation as that of a trematode or fluke, a cestode or tape-worm, or a nematode or round worm. Further examination will serve to determine average size and form, peculiar texture and other individual features that will enable the investigator ultimately to make a differential diagnosis. It is important first of all to measure ten or twenty eggs in order to arrive at the average size and range. In doing this I hardly need caution the microscopist against selecting such as have evidently experienced injury and are broken or distorted. Like all such structures these eggs display some normal variation, but any discrepancy in size of considerable amount when reckoned on a comparative or percentage basis is likely to indicate actual specific differences and not individual variations. Failure to comprehend and to apply this principle has resulted in much confusion in the past.

The surface of the shell should be examined carefully to determine the presence of markings or pittings over some part of its area, or of spines or knobs at one point or another. All such features if generally found on the eggs under consideration, and not as exceptional or abnormal features of one or a few specimens, will serve as factors in reaching a decision as to the species present.

There are some eggs that by virtue of a richly sculptured surface are sometimes not recognized as such, and there are other bodies of oval form which appear like eggs. Thus coccidia have been diagnosed as distome eggs and *vice versa* fluke eggs were once duly baptized as a new genus and species of coccidia. Such errors can only be avoided by careful study of the material and yet the danger at this point is small. There are very few items in fecal examination which with reasonable care will be confused with the eggs of parasites that occur in the feces. However, in order to make the description even more unmistakable I have prepared drawing of the eggs of various parasites which accompany this text and illustrate the size, form and individual peculiarities of the egg in each species. Nearly all species are represented which infest man, even rarely, and the types omitted are such as the student in this region would be unlikely to encounter; they occur so rarely and in such distant and limited regions as to render their omission of little practical importance. The series of descriptions and figures will also serve to aid the physician in determining if there be in this region other forms of internal parasites as yet unrecognized. These eggs are grouped according to the various types of parasite. As each type has its characteristic type of egg a preliminary examination will suffice to determine the group to which the egg belongs and further comparison need be made only within the limits of this group.

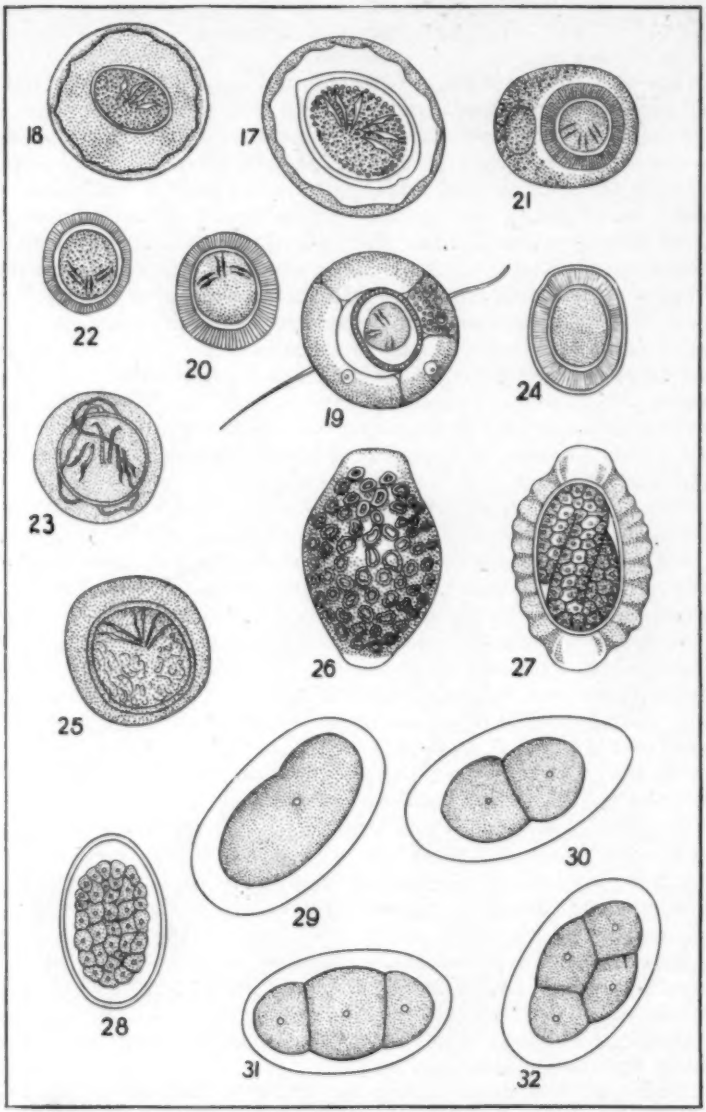

PLATE III.

Fig. 17.—Egg of *Hymenolepis diminuta*, elongated form.
Fig. 18.—The same, spherical form. After Blanchard, 1891, p. 45.
Fig. 19.—Mature egg of *Tænia saginata*. After Leuckart, 1886, p 568.
Fig. 20.—The same without external membrane. From human feces. After Leuckart, 1886, p. 186.
Fig. 21.—Egg of *Tænia solium*. After Leuckart, 1886, p. 667.
Fig. 22.—The same without external membrane. From human feces. After Leuckart, 1886, p. 186.
Fig. 23.—Egg of *Hymenolepis nana*. After von Linstow, 1896, p. 580, Fig. 4.
Fig. 24.—Egg of *Tænia confusa*. After Guyer, 1898, Pl. XXVIII, Fig. 11.
Fig. 25.—Egg of *Dipylidium caninum*. After Diamare, 1893, Pl. I, Fig. 18.
Fig. 26.—Egg of *Dioctophyme renale* in surface view. After Balbiani from Railliet, 1893, p. 421.
Fig. 27.—The same in optical section.
Fig. 28.—Egg of *Ankylostoma duodenale*. After Patona and Grassi, 1878, Pl. II, Fig. 6.
Fig. 29.—Egg of *Necator americanus* from human feces. After Stiles, 1902, p. 193.
Figs. 30-32.—Same with cleavage begun.

The trematode, or fluke, produces an oval or ellipsoidal egg, usually dull yellow, yellowish brown, or dark brown in color, and semi-opaque or even more difficult to see through. In form it is usually symmetrical though one or two species have one side slightly flattened. One end is usually a little blunter, and often the other end bears a small knob, or even a tail-like spine. In the place of this knob or filament some eggs merely show a roughened area. Many fluke eggs have a cap or lid which springs open when the embryo is ready to emerge. In other cases this structure does not exist, but even where it does, the observer may have much difficulty in demonstrating its presence. The thickness of the shell varies, but on the average is rather great except in the blood flukes, where also there is a well developed spine in one species, but no cap. The number of eggs produced is large and the production constant so that the observer can repeat his findings from day to day over long periods of time. Data regarding the majority of species may be found under the individual headings.

The sheep liver fluke, *Fasciola hepatica,* is a cosmopolitan parasite of that common domestic animal. It occurs in great numbers in all moist regions and yet its rarity in the human host is such that only a score or more of cases are on record. The egg (Fig. 12) measures 0.13 to 0.140 mm. in length by 0.075 to 0.09 mm. in breadth, being among the largest of fluke eggs in man. Rosenberger has recently published[3] a record of its presence in a hospital patient which no doubt rests on an error; the species present was probably *Fasciolopsis buskii.* These two eggs are easily confused on account of their great similarity in size and form. On the whole the egg of *F. hepatica* is rounder or fuller, the shell is a trifle heavier and the cap perhaps not quite so distinct. The egg of *F. hepatica* has also a few irregularities at the pointed pole.

The large American fluke, *Fasciola magna,* occurs over a large area of our country, in wild ruminants or in cattle. It has never been reported from man; the eggs (Fig. 11) are so much like those of *F. hepatica* that Stiles says they can hardly be distinguished, even though in general he finds them slightly larger.

Busk's fluke, *Fasciolopsis buskii,* is common in the East and has been recorded as introduced into this country at several places. The ova (Fig. 10) measure from 0.12 to 0.13 mm. in length and from 0.07 to 0.08 mm. in breadth. The shell is thinner and tapers more towards both poles than in *F. hepatica.* The cap is smaller.

Much confusion was introduced into scientific literature by grouping together as one species the different forms of lung fluke. In recent publications I have shown that there are at least three distinct, though closely related species. The American lung fluke, *Paragonimus kellicotti,* thus far found only in dog, cat and hog, and not in man, has eggs which measure 0.096 to 0.0118 mm. long by 0.048 to 0.055 mm. broad. The original form, *Paragonimus westermanii,* found in the tiger in India, has eggs which are only 0.077 to 0.081 mm. long and 0.043 to 0.050 mm. broad. The Asiatic lung fluke, *Paragonimus ringeri* (Fig. 16) found very

3. Proc. Phila. Path. Soc., xiv, 112.

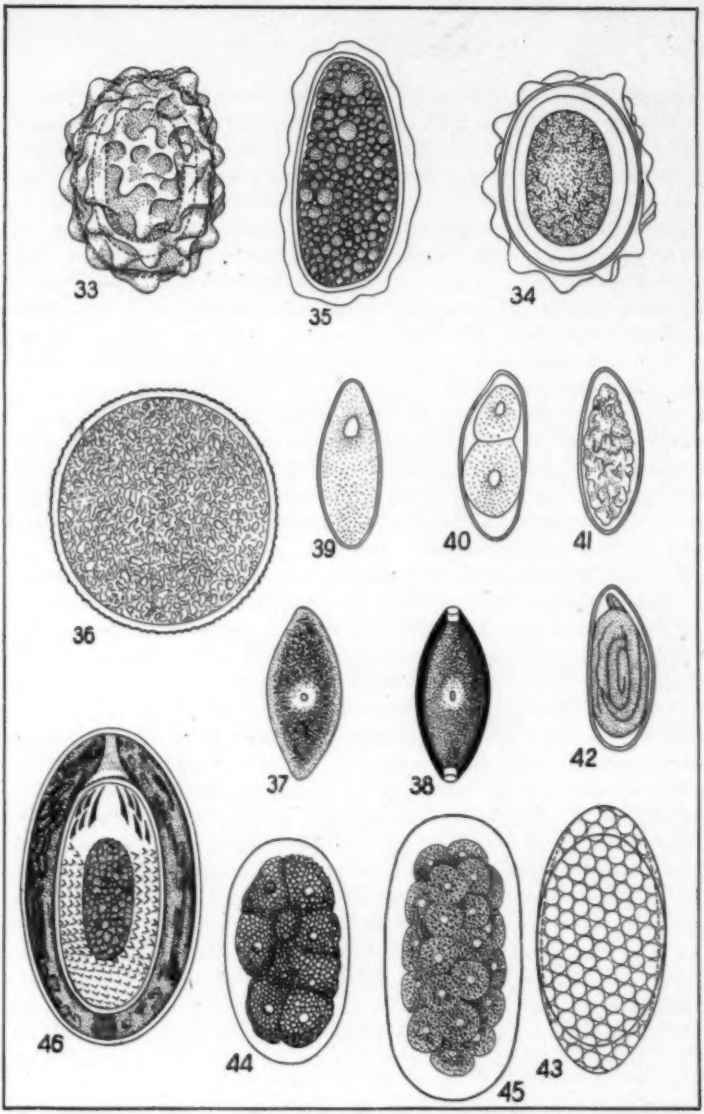

PLATE IV.

Fig. 33.—Egg of *Ascaris lumbricoides* from human feces. Seen in surface aspect. After Stiles, 1902, p. 202.

Fig. 34.—Same in optical section.

Fig. 35.—Unfertilized egg of *Ascaris lumbricoides* from human feces. After Miura and Nishiuchi, 1902, p. 638.

Fig. 36.—Egg of *Ascaris canis*. After Braun, 1902, p. 303.

Fig. 37.—Egg of *Trichuris trichiura* from uterus of female worm. After Leuckart from Stiles, 1902, p. 202.

Fig. 38.—Same in stage from human feces.

Figs. 39-41.—Eggs of *Oxyuris vermicularis* taken from uterus of female worm. After Leuckart from Stiles, 1902, p. 202.

Fig. 42.—Same in stage found in human feces.

Fig. 43.—Outline of egg of *Strongylus subtilis*. The larger oval and the cleavage cells from eggs free in stomach contents, after Ijima, 1896, p. 160; the smaller oval from eggs before deposition, after Looss, 1895, p. 169.

Fig. 44.—Egg of *Strongyloides stercoralis* from human feces. After Thayer, 1901, Pl. IX, Fig. A.

Fig. 45.—*Trichostrongylus instabilis;* egg from feces. After Looss, 1905, Pl. IX, Fig. 21.

Fig. 46.—Egg of *Giganthorhynchus gigas*. After Leuckart from Braun, 1902, p. 309.

abundantly in man in Japan, China and Formosa and introduced by laborers into the United States, has ova that measure 0.087 to 0.1 mm. by 0.052 by 0.066 mm. It is not difficult to distinguish the adult worms by microscopic data, but as the ova are so much alike care is needed to avoid errors in diagnosis when the eggs only are available. It should be remembered that either species not yet recorded from man may occur in that host and it is very important to determine accurately the species present in new cases as that will help indicate the source of the infection. So far as known all American cases are imported and none represent infection acquired on this continent.

There are really two types of the form formerly called *Opisthorchis sinensis*. These have been designated by Looss as the Chinese fluke, *Clonorchis sinensis*, and the Japanese fluke, *Clonorchis endemicus*. The former has been seen at autopsy of Chinese in this country. The eggs of the two species are very similar measuring from 0.025 to 0.03 mm. in length. In *C. sinensis* (Fig. 1) the width is from 0.015 to 0.017 mm. while in *C. endemicus* (Fig. 2) the egg is distinctly more slender, measuring only 0.013 to 0.016 mm. in width.

The Egyptian fluke, *Heterophyes heterophyes* has never been reported in North America. The egg (Fig. 9) measures 0.03 by 0.017 mm.

The lancet fluke, *Dicrocœlium lanceatum* (Fig. 3, 3*a*) common in sheep has been found only very rarely in man in Europe and never in this country. Its eggs measure 0.038 to 0.045 mm. by 0.022 to 0.030 mm.

A few other flukes are reported from the human intestine, but so rarely, only a single case of infection from each species, that they may be passed over here with the bare mention. But I cannot leave the subject of flukes without some reference to the species that inhabit the blood system, especially the portal vein and its branches, together with the veins of the pelvis, bladder and rectum. The ova escape into the bladder and rectum and so may be seen either in urine or feces.

The oldest and best known species is the Egyptian blood-fluke, *Schistosoma hæmatobium*, the eggs of which are always voided with the urine. They are very large (Figs. 4-5), being usually about 0.12, but even up to 0.19 mm. long by 0.05 to 0.073 mm. broad. One end tapers to a spine of variable length. The shell is very thin; there is no cap present. Within one can see the fully grown embryo moving about, ready to hatch. When brought into fresh water the egg splits open and the embryo swims out.

The Asiatic blood-fluke, *Schistosoma japonicum*, discovered by Katsurada in 1904, and now known to be abundant in Eastern Asia, deposits its eggs where they escape into the rectum and are voided with feces. The eggs (Fig. 6) are much smaller, averaging only 0.083 by 0.063 mm. They also contain a well developed embryo. The eggs of this species, studied in the Philippines by Woolley, were somewhat smaller still, being on the average only 0.062 to 0.044 mm. The eggs of this species are rounder than those of *S. hæmatobium*, blunt ended and without spines, though a minute knob or thickening may be detected in some cases by high power.

A third species, characterized by lateral spined eggs, has been said to occur in the West Indies and the Canal Zone. These eggs (Fig. 7) measure 0.012 to 0.162 mm. by 0.06 to 0.07 mm. To this species the name *Schistosoma mansoni* has been given. Some eminent authorities deny that these are more than abnormal ova (Fig. 7*a*). The possibility of finding cases in Illinois introduced from the Canal Zone must not be lost sight of.

Tapeworm eggs are distinctly variable in form. Ordinarily one finds them spherical, oval or elliptical, but some are polyhedral or more or less irregular. The fish tape-worms have eggs much like those of the flukes already described; the shell is yellow, or yellowish brown, with a cap; and a ciliated embryo develops within the shell. Other tape-worm eggs have no lid and the shell is often very thin. There are two or three other membranes, sometimes with long filaments at the poles; and these membranes may shrink or be torn away, so the appearance of the egg is changed radically. Furthermore, the embryo has no cilia, but is a minute six-hooked sphere, the so-called onchosphere, often conspicuous and easily recognized. The membrane next to the onchosphere is thick and usually of peculiar structure. It is of all the most constant in appearance and in size, and is used as a diagnostic feature. It is known as the embryophore.

The fish tape-worm of man, *Dibothriocephalus latus*, possesses eggs (Figs. 13, 14) with a thick brown shell, provided with a small cap which is usually easy to see. They measure 0.068 to 0.071 mm. in length by 0.045 mm. in breadth. This species is common in Scandinavian territory and has been introduced into this country by immigrants. It has succeeded in gaining a permanent foothold at least in one lake region in Minnesota.

The large Japanese tape-worm, *Diplogonoporus grandis*, has not yet been recorded in the United States. Stiles has called attention to the importance of watching for its evident possible introduction by immigrants or troops returning from the East. The egg (Fig. 15) has a deep brown shell, which is thick, oval, and measures 0.063 mm. long by 0.048 to 0.050 mm. broad.

The rat tape-worm, *Hymenolepis diminuta*, was first reported from man in this country and since then has been shown to occur in Europe and South America also. The eggs are round (Fig. 18) or oval (Fig. 17), and measure 0.060 to 0.070, rarely up to 0.086 mm., in diameter. The external membrane is indistinctly striated, and delicate, the middle membrane is double, the embryophore has two points or knobs at the poles. The onchosphere measure 0.036 by 0.028 mm. and its hooks are 0.011 mm. long.

The dwarf tape-worm, *Hymenolepis nana*, which recent work has shown to be the most common human cestode in the United States at present, has spherical eggs; the inner membrane has at two poles indistinct filiform processes (Fig. 23) three or four times as large as the egg. These threads lie coiled between the two membranes in such a way as to simulate a third intermediate membrane. The external diameter of the egg is 0.039 mm., the inner membrane measures 0.028 mm. and the onchosphere 0.016 to 0.019 mm. in diameter. The hooks are 0.0092 mm. long.

The beef tape-worm, *Tænia saginata,* produces eggs (Fig. 19) with a delicate external membrane often drawn out into delicate processes at the poles. This membrane measures 0.07 mm. in diameter and is often wanting (Fig. 20). The embryophore is heavy, cross-striated and oval in form, measuring 0.03 mm. in length. The embryo itself measures only 0.02 mm. in diameter.

The pork tape-worm, *Tænia solium,* has eggs (Figs. 21, 22) not readily distinguished from those of the beef tape-worm as they are practically identical in size. The embryophore is more nearly spherical, the onchosphere a trifle smaller, and possibly thicker walled. But these two eggs can hardly be differentiated microscopically with certainty.

A new American species, *Tænia confusa,* which has been seen only rarely, has eggs (Fig. 24) that are white, or only slightly yellowish. They measure 0.039 mm. long by 0.03 mm. broad.

The dog tape-worm, *Dipylidium caninum,* is a rare parasite of man. Its eggs (Fig. 25) are spherical and measure 0.043 to 0.05 mm. in diameter. The embryophore is thin; the six-hooked embryo measures 0.032 to 0.036 mm. in diameter.

A few other species of cestodes have been recorded in rare instances from the human host. They are not sufficiently well known or frequent to call for further mention here.

Among the round worms, or nematodes, the ova are variable in type and are rather definitely related to the life history of the individual species. All of the filariæ are viviparous and the eggs develop to young worms in the uterus of the parent. They are extruded as active embryos into the blood or lymph in which they are often found in infected regions. Other forms produce eggs which are retained so long in the body of the female that when deposited they contain a fully developed young embryo just ready to hatch out. In such cases the egg shell is delicate, easily broken and usually transparent. At the other extreme one finds eggs with enormously thickened shells, to which in some cases is added an extra outer layer of other material. In the thick-shelled egg the development of the germ cell has often hardly begun and the embryo requires weeks or even months for its development. Such eggs have also extraordinary powers of resistance and retain vitality and ability to yield a living embryo after having been kept in dust in a laboratory jar for several years. Between the two extremes noted one may find every gradation represented by some particular species, and *vice versa* may justly infer the general course of the embryonic history from the character of the particular egg. Nematode eggs are round or oval without a cap, and, if irregular in surface aspect, are so by virtue of the outer layer already noted. The character of the embryonic mass within the shell is important in reaching a determination of the species.

The egg (Fig. 44) of *Strongyloides stercoralis,* already referred to, has been described by Thayer; this egg does not usually reach the exterior as the embryo develops rapidly and ordinarily hatches out in the intestine. The egg measures 0.0675 by 0.0375 mm., is elliptical with a

clear yellowish shell or granular contents. Foreign investigators give the measurements somewhat differently. Thus Braun states them as 0.050 to 0.058 by 0.030 to 0.034 mm.

The whip-worm, *Trichuris trichiura,* has elliptical eggs (Figs. 37, 38) very easily recognized by the thick shell, which is apparently perforated at both poles and has the pores closed by transparent plugs. These eggs taken from fresh feces show contents which have not begun to divide. They measure 0.050 to 0.054 mm. long by 0.023 mm. broad.

The very rare kidney-worm, *Dioctophyme renale,* which occurs as a parasite of the dog in this state, but fortunately has not yet been found in man, has eggs of a peculiar corrugated exterior readily recognizable in the illustration (Figs. 26, 27). They are 0.064 mm. long and 0.04 mm. broad.

Trichostrongylus subtilis, which is common in man in Egypt and is also reported from Japan, has thin-shelled colorless ova (Fig. 43), much like those of the Old World hookworm in form and appearance and likely to be confused with them in fecal examination. The egg shell measures 0.073 to 0.076 mm. in length by 0.040 to 0.043 mm. in breadth. It is thus much larger than that of the Old World hookworm and somewhat larger than that of the American hookworm.

The Old World hookworm, *Ankylostoma duodenale,* produces a thin-shelled egg (Fig. 28) which contains a mass of large cleavage cells. The egg measures 0.056 to 0.061 mm. long by 0.034 to 0.038 mm. broad.

The egg (Fig. 29) of the American hookworm, *Necator americanus,* is especially characterized, according to Looss, by a marked tapering toward one pole, a feature not seen in the eggs of *Trichostrongylus subtilis* or of *Ankylostoma duodenale* with which it may be most easily confused. The eggs of the American hookworm (Figs. 29 to 32) are intermediate in size between those of the other two species, measuring 0.064 to 0.072 mm. long by 0.036 mm. thick. Some contain a mass of large cells, others have already a fully developed embryo when voided.

The most easily recognized of all eggs is that of the common stomach worm, *Ascaris lumbricoides* (Figs. 33, 34). It has a roughly mammillated surface and a heavy shell wall. In form it is elliptical to rounding; the shell is three layered and the external albumin coat has a yellowish tone. The contents are granular and a clear space, crescentic in form, intervenes at each pole between the contents and the shell. These eggs measure 0.065 by 0.049 mm. Occasionally one finds in fecal examination a number of peculiar eggs (Fig. 35) which suggest those of this species, but are distinct in form and proportions, and especially so in thickness of the outer shell layer. They are nearly smooth in surface aspect and the contents appear different, particularly since the clear areas noted above are entirely lacking. In fact these peculiar eggs are unfertilized eggs of this species.

The dog stomach-worm, *Ascaris canis,* is very rarely found as a human parasite. Its ova (Fig. 36) are readily recognizable by their spherical form. The shell is thin and the albumin layer regular and not conspicuous. The egg measures 0.068 to 0.072 mm. in diameter.

The seat-worm, *Oxyuris vermicularis*, does not ordinarily deposit its eggs in the feces, so they are rarely found in fecal examinations. The eggs (Figs. 39 to 42) are oval, possess a very think shell and contain, when deposited, an already well developed embryo. They measure 0.05 by 0.016 to 0.02 mm.

A single record of a human nematode parasite, *Ascaris texana*, would hardly call for notice were it not that this form may occur in our own state. According to Smith, the ova were numerous, with thick shell, which has neither special markings nor external albumin layer. These eggs measured 0.060 by 0.040 mm. The data regarding this form are unfortunately incomplete.

The acanthocephala are rare as human parasites though one species is the most abundant parasite of the domestic hog. The eggs are very characteristic, having three membranes and containing an embryo already well developed before they leave the parent worm. The egg (Fig. 46) of *Gigantorhynchus gigas*, the pig-worm, measures from 0.08 to 0.1 mm. in length. The embryo shows at the one pole a group of hooks.

Data are not given for a few species of round worms which are so rare as human parasites, or so isolated and distant in occurrence, that they are not likely to be found in fecal examinations in this part of the world.

EXPLANATION OF PLATES

All of the figures have been brought to the same scale in copying and the reproduction has made them of the uniform magnification of 500 diameters. Unless otherwise stated they represent normal and average ova for the species indicated.

SOME MODERN MEDICO-SOCIOLOGIC CONCEPTIONS OF THE ALCOHOL, VENEREAL DISEASES, AND TUBERCULOSIS PROBLEMS *

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NEW YORK

Mr. President, Members of the Illinois State Medical Society, and Invited Guests: My first duty, and I assure you it is a pleasant one, is to thank you with all my heart for the honor you have conferred on me by the call to deliver the oration on medicine before this illustrious medical body composed of the physicians and surgeons of the great state of Illinois. I rejoice in being with you and I know that I am and shall be benefited by my association with so eminent a body of men.

* Oration on Medicine delivered before the Annual Meeting of the Illinois State Medical Society, at Springfield, Ill., on May 23, 1912.

I trust that I shall retain much of the instructive papers and discussions I have listened to, but aside of that I am sure that I shall take away with me some of that progressive spirit so characteristic of the West. It was my rare privilege to have commenced my medical career in the most western state of all, in the glorious climate of southern California; and it has been my equally great privilege in late years to have been called to address various medical societies in the western states and meet men from these states in consultation. So I may say I feel really at home among you and feel that you will understand me if in what is to follow I bring forth some modern, some western ideas which, in the more conservative environments of the East might perhaps find less willing ears. Thus, with a feeling of confidence that, even if you do not entirely agree with me, I shall have your sympathetic interest, I will at once proceed to give you what I consider a modern medicosociologic conception of the alcoholic problem.

The Conservation Commission has reported that 3,000,000 people of this country may be considered on the sick list and that their annual loss in wages is $700,000,000. What portion of these 3,000,000 suffer from either one, the two or all the three medicosocial diseases or their sequelæ, I leave to your imagination to determine.

ALCOHOLISM

I will try to burden this paper as little as possible with statistics, for I do not believe that any of the published statistics, either on the production of alcohol, the amount of its consumption, or the amount of evils alcoholism is responsible for, are accurate. Besides the legitimate production controlled by the government, there is the illicit still; besides the consummation of alcohol in wine, beer, and whisky, drunk at home or passed over the bar in the saloon, there is the large amount of alcohol taken in the form of patent medicines, of which it is said that the American people consume annually $2,000,000 worth. While we know that any number of diseases can be traced to the excessive and injudicious use of alcohol, when this is the primary cause of death it is rarely found in our statistical tables.

The claims that 25 per cent. of all insanity is due to alcoholism and that a larger percentage of crime can likewise be traced to excess in alcohol, may be approximately correct, but here we have only official data from institutions and the number of epileptics, feeble-minded, or those on the border line of insanity who are at liberty have never been counted. Neither do we know half of the crimes committed under the influence of alcohol, for unless the victim has been seriously injured physically and the matter becomes known to the police, nothing is heard of the incident.

Of the moral injury, the mental suffering, the agony of soul, which an alcoholic may produce we hear nothing. Think of the inebriate husband returning home, abusing his wife and children, quarreling without cause, depriving them of comforts and often of the necessities of life because he spends most of his earnings to satisfy his cravings for liquor! Think of the father or mother who see their offspring, perhaps a promis-

ing, bright, unusually talented young man, fallen victim to the drink habit and disgracing himself and all those who should by bonds of blood be near and dear to him! Lastly, can you conceive of a more agonizing spectacle than a drunken woman? That such cases are not by any means infrequent and are not confined to the so-called lower strata of society many a family practitioner or nerve specialist can testify.

Some call alcoholism a curse, a bane, an evil; I prefer to call it a disease, preventable and curable. It would seem to me that for our purpose to-day there is no need to make any distinction between acute and chronic alcoholism. In an acute alcoholic attack a man may be as dangerous as the chronic alcoholic is occasionally, and vice versa. Both states are pathologic and while there may be no visible pathologic changes, the finer brain and nerve cells become surely affected. Repeated acute attacks of alcoholism or a chronic inebriation by wine, beer, or whisky are due to an alcoholomania. Whenever alcohol is taken in poisonous amounts we have mental disturbance, muscular incoordination, gastro-enteritis, etc.

The symptomatology as well as the pathology are known only too well, but concerning the etiology and treatment from a medicosociologic point of view we need to know a good deal more. Is this disease hereditary or not? I am convinced that the tendency to alcoholism is not infrequently transmitted. The cases on record are quite frequent. Dr. Norman Kerr,[1] the president of the British Society for the Study of Inebriety, states that among 1,500 inebriates under his care, 755 had a distinct parental inebriety. Crothers in this country collected 500 alcoholic cases with 225 of parental inebriety. In a recent discussion on "The Influence of Alcohol on the Germ Cells and on the Offspring," before the New York Academy of Medicine, Prof. Charles R. Stockard of Cornell University quoted the observation of Sullivan which, I believe, gives the best clinical evidence to justify classing alcoholism as a disease directly transmissible through the germ cells by its influence on the ovum. The following is a case from my own observations: A sober and industrious woman married a sober and industrious husband and had three normal children. The husband died, and she married a drunkard; the result of this union was again three children; one became a drunkard, one an epileptic, and one a degenerate. This second husband died; the woman entered the matrimonial state a third time, but having profited by her experience with the second husband, chose once more a sober and industrious man. The issue of this union were two children sound in body and mind.

The observations in the Edinburgh prison for inebriates showed that when the mother was the alcoholic parent, the results were even more disastrous, for abortions, degenerates, children addicted to drink, or afflicted with epilepsy and insanity were numerous and the number was still greater when both parents were drunkards.

Aside of the mental and nervous diseases which afflict those born of alcoholic parentage we can surely consider gout and, in not a few instances, a tuberculous predisposition to be the result of the alcoholic

1. Twentieth Century Practice of Medicine, vol. iii.

inheritance. Marcomaniac impulses have been manifested at the age of 5 and 6, and the morbid impulse, unless resisted, tends to grow stronger. In some instances the individual seems to be fully aware of this inherited tendency and the danger to which he is exposed. I recall the case of a gentleman of my acquaintance and a coworker in social work, one of the highest type of men I have ever met. He confessed to me that he was certain that his gouty affliction was transmitted to him from his parents, that he had restrained the impulse to indulge in alcohol from the time he could think and reason, and that he was certain that if he were to yield even then to the desire to partake of alcoholic beverages, he would end in the gutter. Such cases of self-restraint are, however, rather the exception than the rule. A vast number of the progeny of the alcoholic, as has just been stated, become also addicted to alcoholism, develop into epileptics, become insane, or are degenerates.

We possess, however, not only clinical but also absolute and irrefutable laboratory evidence which shows the great affinity of alcohol not only for the brain and nervous system but also for all the reproductive glands.

Dr. Stockard, in his communication already referred to, spoke of experiments which showed that by exposing fish embryo to the fumes of alcohol, veritable monsters can be produced; and his experiments with hen's eggs, mice, and guinea-pigs all show that when the embryo is exposed to alcoholic influence in the early stages the result is always detrimental, although in the later stages the influence on the reflex system is greatly lessened.

After thus defining alcoholism as a hereditary affliction or an acquired illness, let us try to look a little deeper into the etiology of acquired conditions in the hope of finding a guide to prophylactic and curative measures. Among the diseases which predispose to alcoholism are rheumatism, gout, syphilis, epilepsy, anemia, uterine troubles, and digestive disturbances due to unwholesome and injudicious diet. Thus we must first cure all these afflictions if we would wish to do away with them as predisposing factors. In women, it is said that menstruation, parturition, lactation, and menopause are not infrequently potent influences in acquiring the alcohol habit; and in boys arriving at the age of manhood the desire to partake of alcoholic drinks often arises not merely because of their entering manhood, physiologically speaking, but also from a sociologic cause — a desire to do as men do.

When the tendency to alcoholism is not inherited, it would seem that the chances for acquiring the alcohol habit are greater after the age of 25, but if we would wish to institute an intelligent prophylaxis it might be well to bear in mind the fact that in young men and, alas, also in young women, the gradual liking for alcohol is developed at a time when they begin to associate with each other in social functions or enter into business life in a more or less independent position.

Idleness as well as monotony in daily physical labor and sedentary occupations are important sociologic factors predisposing to alcoholism. I do not know what remedy to suggest for this except that the employers of large or small bodies of men or women should bear in mind that the

efficiency of the worker is increased by rendering him mentally happy and physically well.

That higher culture or a liberal education is not always a restraining influence from alcoholism has already been pointed out; but among the higher as well as among the lower classes of men and women there are other causes underlying alcoholism which are well indicated in the definition by Dr. Smith Ely Jelliffe of New York City. He considers alcoholism a purely mental problem. That I do not entirely agree with him you must have already noticed, but his definition that alcoholism is a characteral reaction, the result of fundamental needs, is certainly applicable to a large number of cases. To the depressed, to the discouraged, to the disappointed men and women, to the overworked, to the individual who because of age or infirmity has lost the control of affairs or the prestige in the social or business world he formerly enjoyed, the indulgence in alcoholic drink brings a dissociation of function and an imaginary return to former happier, more contented states, or forgetfulness. When this resort to alcohol becomes chronic, I think Dr. Jelliffe's statement that man then reverts from the highest type of his development to the lower degrees which he had passed through in his evolution is most applicable. It would thus seem futile to treat alcoholism in an individual without having studied his character reaction and found the underlying cause of the desire for alcoholic stimulants — in other words, we must study the true etiologic factor in the individual if we wish to cure him of his disease. It is then that the psychologist, the physician of the mind and soul, can display his power and bring into play his ability to reason with the patient and help him again to a normal state of mind. That in some instances suggestion-therapy, autosuggestion, and even hypnotism, must be resorted to, I am absolutely convinced.

We come now to the last and to my mind most important sociologic factor predisposing to alcoholism, namely, poverty, want, and misery. In nearly all medicosociologic studies of alcoholism which it has been my privilege to read, I have found the stereotyped statement that poverty is an effect and not the cause of drunkenness. I cannot too strongly oppose this statement, for it is my firm conviction that alcoholism is fully as frequently the result of poverty as poverty is the result of alcoholism.

You surely do not expect me in this essay to give a recipe for overcoming poverty and want. This must of necessity be the work of the statesman, the social economist, and philanthropist, and will result from a universal strife after more social justice.

After this brief summary, what may we suggest in the line of prophylaxis according to our modern conception of alcohol as a medicosociologic disease? The first thing that would seem to me essential is to discover during child life, and particularly during school life, as far as it is at all possible, any inherited tendency to alcoholism in children. Primarily, this would of course be the duty of the family physician and later on of the school physician. In families without a physician, the family history, paternal and maternal, and alcoholic habits should be investigated by publicly appointed physicians with all the delicacy, secret-

ness, and tact necessary for such a task. The unusually nervous or irritable, anemic or underfed pupil, and the mentally deficient scholar would justify such an investigation more particularly. The parents' cooperation may be of incalculable value in the preventive treatment for such a child.

In cases where investigation proves that either one or both parents are addicted to drink, the state should have a right to remove the children from such dangerous environments until such a time as the parents have reformed their habits or the child's character is formed and it has become strong enough to protect itself.

The treatment of the child predisposed to alcoholism should be physical and moral. The open air school, more outdoor play, and as little home study as possible, ample nutrition if such is deficient, hydrotherapy, and in extreme cases suggestion-therapy, or hypnotism, should be resorted to. It goes without saying that in all children, but particularly in children from an alcoholic parentage, intoxicants in all degrees of potency should be absolutely excluded from the daily dietary.

The continuation of such a careful life with abstinence from all alcoholic drinks is of course essential in later years, no matter what career the young man or woman may have chosen. This formation of character of which I have spoken is the only safeguard against the temptation to drink with which the young man, or, to a lesser degree, the young woman in college, shop, factory, or society, is beset. The one and all-important lesson these young people must learn is that when overworked and tired out, rest and natural food and natural drink are the best remedies to overcome fatigue, and that an alcoholic stimulant acts only as a spur does on an overtired horse.

But I would be remiss would I not call attention to the fact that there is also a dietetic cause predisposing to alcoholism. It is not only lack of food which creates in many a craving for stimulants, and I say in all sincerity that bad cooking is indeed a predisposing factor to alcoholism. The doughy fresh white bread, the hot biscuit, the hot cake so dear to the American palate, and the hasty way of taking food, are all factors producing chronic digestive disturbances which many a man believes he can combat by taking alcoholic stimulants. In many the chronic desire for whisky is created thus. The remedy lies in better cooking. Let our girls learn how to cook, let us do away with evidently indigestible food substances, let us give to our employees enough time to eat and digest, and let us take time for these necessary functions ourselves.

Against the use of patent medicines containing alcohol, the long continued use of which leads not infrequently to as distinct a state of chronic alcoholism and as serious a one as that produced by partaking of alcohol in the form of whisky, wine, or beer, government supervision and the education of the masses are the only remedies. By government supervision I mean, of course, prohibition of fraudulent advertising, claiming cures which were never accomplished, etc.

The young man going out into the world should remember that the so-called American treating habit, considered an evidence of good fellowship, is thoroughly un-American, pernicious and detrimental to his physical, moral, and in not a few instances to his financial welfare. I have no hope that the use of alcohol as an occasional stimulant will be abolished within this generation or the coming one, but knowing that this treating habit has been the cause of many a young man, naturally temperately inclined, having lost self-control and become chronically addicted to drink, I would love to see a strong agitation against the treating habit throughout this nation. To use the language of a beloved teacher of mine, Prof. Beverley Robinson of New York, "let every man pay for and ask for his drink when he wants it, but let him also be an independent 'crittur' and not drink for goodfellowship when he knows it is hurtful to him physically or beyond his means pecuniarily. My feelings are in favor of treating, I humbly acknowledge, but my reason is dead against it."

This would be one of the prophylactic measures which I would recommend as essential to combat acquired alcoholism. Next to it, I believe in education and in temperance societies; not in the fanatical measures of the intolerant teetotaler or the sometimes absurdly unscientific teachings in our public schools about this matter, but in educating the young and the old in a rational manner about alcoholism, and most of all I believe in example.

If people desire to take wine, or beer, or diluted whisky, let them take it with their meals and they will drink a great deal less; let them particularly do away with the pernicious habit of ingesting alcohol before meals as appetizers in the form of cocktails. I believe there exists in England a society which adheres to the precept of never partaking of alcoholic drinks except with meals. This is a step in the right direction. The formation of temperance societies, I have already said, I encourage among professional as well as working men. These societies cannot be too numerous and I am glad to say that in this country as well as in Germany the physicians have taken the lead among professional men and have formed such temperance societies. Our friends the lawyers have not yet followed our example but there is hope that they will do so ere long.

The discussion of prophylactic measures would not be complete should I not say a word on the question of prohibition. This is a very dangerous path to tread, and if you permit me I will, before expressing my own views, give the opinions of men of much wider experience and greater knowledge. Our greatest authority on the subject is, I believe, the eminent and justly celebrated and honored Harvey W. Wiley, former chief of the Bureau of Chemistry at Washington. He says: "Until within a few years I have been opposed to forced prohibition. If man should never be subjected to any temptation, his stamina of character and power of resistance to evil would undoubtedly be diminished. This would be a very sad condition of affairs if at the same time the evil itself were not obliterated.

"In the last few years I have been so impressed with the evils of the excessive use of alcoholic beverages of all kinds that I feel at times as if universal prohibition could be nothing less than a blessing. At the same time I believe that the very moderate use of the very best old fermented and distilled beverages may be conducive to health and longevity if this use is not begun until the formative period of life is completed."

Prof. Simon Baruch of the Columbia University of New York is much more drastic in his conclusions, claiming that alcohol is neither food nor stimulant. He desires its complete removal from social life. Professor Muensterberg of Harvard has this to say on prohibition: "Prohibition puts a premium on the systematic violation of law and produces a form of corruption which is still worse than the corruption which irradiates from the licensed saloon. Further, it reinforces drinking in its most miserable and dangerous form. The moderate drinker is cut off, while the immoderate drinker is created. It abolishes light wine and beer, and opens wide the way for the worst kind of whisky. It eliminates every sound supervision and makes minors and inebriates the favorite customers. A clean surface appearance is bought at the expense of inner moral and mental destruction. Worst of all, the masses who feel the instinctive need of an anesthetic quickly find substitutes.

"I speak as a psychotherapeutist whose experiences cover the whole country, if I say that the spreading of cocainism and morphinism, of sexual perversion and ruinous habits among the abstainers is alarming. But even on the surface any one can see to what degree of dulness on the one side and of vulgarity on the other side the masses are led if the means of physiologic relief are cut off from a strong, hard-working population. To fight intemperance by prohibition means to substitute one evil for another. We must institute a reform by slow education toward a moderate use of light wine or beer, with complete abolition of the present saloon and of the present disgusting habits, and that is the only way to permanent success in this country, as long as Americans remain Americans."

Now may I add in a few words my own conviction regarding prohibition? Like the distinguished Professor Muensterberg I question the wisdom of absolute prohibition in our present state of civilization. Could the Gothenberg system be carried out in the United States, I would certainly favor it as a means of decreasing intemperance, and consequently crime and disease. This system consists in the manufacture and sale of alcohol by the government and giving the dispenser of alcohol a salary, so that no benefit shall accrue to him from the amount of alcohol he sells. The law strictly prohibits the sale of liquor to the intoxicated, the habitual drunkard, and to minors. I am almost tempted to suggest this method to some of our prohibition states — it would probably tend more to decrease intemperance than prohibition laws do now, as they have worked in Maine, for example. However, with a heterogeneous population like ours, the same laws are perhaps not applicable to every state. Prohibition has decreased crime in the South

among the negroes, while, if I am correctly informed, crime and arrests for intoxication are on the increase in Maine.

It is the same with individual states as it is with individual men and women; they have their idiosyncrasies, peculiarities, and different constitutions. Some people cannot take a teaspoonful of liquor without feeling the intoxicating effect, others cannot drink the smallest quantity without a desire for more than is good for them being aroused. That a low type of saloon is injurious to any community every one will admit. It would seem that in most of our states it will be difficult to enact and enforce strict prohibition laws. To create by a higher license a higher type of saloons and diminish their numbers must surely have a good effect. To sell alcoholic drinks to minors or intoxicated persons should be severely punishable. But all sham regulations which are sure to be violated, such as all Sunday closing, should not be enacted. Let the saloon be strictly closed during church hours on Sunday, but be allowed to open for certain hours in the afternoon and evening.

In treating the etiology of acquired alcoholism, we have already mentioned the very important rôle of psychotherapeutics to which the physician must sometimes resort if he wishes to treat the alcoholic successfully. But this must be preceded by medicinal treatment with a view to ridding the system of the alcohol. All alcoholic patients are poisoned, and in the language of my friend, Prof. Alexander Lambert of New York, "they must be unpoisoned before they can have a chance to go on as they should go on without their alcohol." I have no doubt that you are all familiar with Dr. Lambert's treatment of alcoholism, described in the *New York State Journal of Medicine* of January, 1910, and *The Journal A. M. A.* of Sept. 18, 1911. The specific of this treatment is a mixture of 15 per cent. tincture of belladonna, two parts, one part each of the fluid extract of xanthoxylum and the fluid extract of hyoscyamus. Here is the exact prescription for this specific:

℞

Tincture belladonnæ	62 gm.	℥ii
Fluidextracti xanthoxyli		
Fluidextracti hyoscyami	aa 31 gm.	℥i

To avoid mistakes, I will copy the essentials for the treatment from Dr. Lambert's paper read before the New York State Medical Society: "From 6 to 8 drops of the specific are given every hour, day and night, until either the patient shows symptoms of belladonna excess, or with the cathartics about to be described, the patient has a certain characteristic stool. This specific is increased by 2 drops every six hours, until 14 to 16 drops are being taken; it is not increased above 16 drops. Usually an alcoholic can be given four compound cathartic pills at the same time that the specific is begun. After the specific has been given for fourteen hours, a further dose of C. C. pills is given, either two or four, depending on the amount of action obtained through the use of the previous dose. If these have acted very abundantly, only two are now necessary. At the twentieth hour of the specific, two to four more C. C. pills are given and after these have acted, should the patient begin

to show abundant green movements, an ounce of castor oil should be given, and a few hours later the characteristic thick green mucous, putty-like stool will appear. Usually the specific has to be continued, and at the thirty-second hour two to four C. C. pills are again given, and a few hours later, the castor oil. The specific can then be discontinued.

"Of course, in treating alcoholics, one finds in the majority of cases the necessity to stimulate them and to give them some hypnotic, but this can be done without interfering with the hourly administration of the specific. During the first twenty-four hours, with the older patients, or with one in the midst of his spree, there should be given whisky in 1-ounce to 2-ounce doses, four or five times with milk. This should not be continued after the first twenty-four hours, and in young robust subjects it is usually not necessary. The belladonna symptoms which would cause one to cut off the specific and wait until they have subsided before beginning again are: extreme dryness of the throat or the beginning of delirium as shown by an insistence or incisiveness of speech with the insistence on one or two ideas, or belladonna rash, or the general flushed red dryness or heat under the skin, of which they will complain. An alcoholic is more prone to react to belladonna than is the morphinist, but if they are sensitive to this drug, they will show it in the first six or eight hours of the treatment.

"After patients have been through this treatment, the desire for alcohol has ceased, and for the next few days it is simply a question of feeding them, of giving them some tonic, and of seeing that they sleep at night. It is noticeable, however, that following this treatment most of the coal tar hypnotics do not act well. The best one is small doses of trional with codein, but the older drugs, chloral and bromids, act much better. A non-alcoholic tonic will soon set these patients on their feet physically, though whenever possible it is desirable that they should be placed where they can put themselves in as good physical condition as possible."

It goes without saying that such treatment is difficult to carry out at home, and a sanatorium or special hospital where patients can enter voluntarily, or be ordered to enter by judiciary proceedings, is absolutely essential to the solution of the alcoholic problem.

This brings us to a very important subject which has recently occupied the minds of leading specialists and philanthropists in New York City, that is to say, the permanent saving of the dipsomaniac by committing him to live and work in the inebriate farm colony. The purpose of this colony is not only to take care of those committed to it by the courts, but to become an institution to which the inebriate would desire to come voluntarily and not wait until he is committed there. The New York law provides that the Board of Inebriety shall do everything it possibly can to get the man on his feet and keep him there, and for this reason a force of field officers will work under direct management of the Board as investigating officials before commitment to and after release from the farm. It is justly believed that a committee which will treat its

inebriates not as individuals to be punished but as patients who must be treated and cured in such a farm colony, will be finally the financial and moral gainer.

New York spends annually $1,750,000 for the arrest and care of cases of intoxication, $92,000 to try these cases in the magistrates' courts, about $250,000 for custodial care by the Department of Correction of persons arrested for intoxication, an average of $1.86 a day to hospitals in Manhattan and the Bronx, besides the sums expended by the Department of Public Charities on some 2,000 cases. I believe it is a safe estimate that the various city and state governments of the United States expend at least $20,000,000 on the arrest and care of and court expenditures for people arrested for overindulgence in alcohol.

There is absolute unanimity of opinion among alienists that men may be saved to useful lives through the operation of state inebriate colonies, and among the heads of institutions it is believed that the large sums now expended in charity and civic expenses will be saved to municipalities, while both give assurance that such farms will greatly reduce the number of insane and criminals.

The marriage of alcoholics should be prohibited by law; but since this will very rarely prevent them from seeking sexual relation I plead with all the earnestness I am capable of for a universal law whereby the unredeemable alcoholic, whether male or female, rich or poor, shall be rendered sterile. It is only thus that we can prevent him from procreating children predisposed to alcoholism and diseases concomitant with such a predisposition. The individual subject to violent alcoholomania and who is beyond treatment should be considered an insane individual and confined in an asylum and rendered sexually sterile.

VENEREAL DISEASES

I have dwelt at some length on the first problem because it is in not a small degree responsible for the two following ones. We know that alcoholism very often leads to venereal excesses. The alcoholic loses judgment and moral restraint. Hence, we very often find that the young man contracts venereal disease during a debauch. Of the relation of alcohol to tuberculosis we will speak more fully later on.

Statistics regarding venereal diseases are as unreliable as those of alcoholism. We all know of the frequency of venereal affliction among all classes of society, among men and women, and, alas, also among children. There are, of course, a few modern conceptions of the venereal problem of which we may speak. First of all, the sanitary control of this class of diseases by the official boards of health. We have started in New York recently to classify venereal diseases among the infectious, communicable, reportable, and preventable diseases. Here are the resolutions passed by the New York City Board of Health a few months ago:

Whereas, The venereal diseases are infectious, communicable, and preventable, and constitute a serious menace to the public health, thus properly coming under the charge of the public health authorities, and

Whereas, It is well established that no administrative control of such diseases is possible without a system of notification and registration, associated with provision for the municipal care of patients unable or unwilling to place themselves under proper medical care and to take the precautions necessary to prevent the infection of others, be it therefore

***Resolved*, First, that on and after May 1, 1912, the superintendent or other officers in charge of all public institutions such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state, and address of every patient under observation suffering from syphilis, in every stage, chancroid or gonorrheal infection of every kind (including gonorrheal arthritis) stating the name, character, stage, and duration of the infection, the date and source of the contraction of the infection if obtainable.**

Continuing, the resolutions request all physicians to furnish similar information regarding private patients under their care, except that the name and address of the patient is not required. The Board of Health will undertake, without charge, to make the necessary bacteriologic examinations and tests for the diagnosis of these diseases, and to distribute the curative sera, but only on condition that the data required for the registration of the case be furnished by the physician treating the patient. The Department will also provide and distribute circulars of information in relation to these diseases.

This is a vast step in advance and will not only lessen the gonorrheal infections in infants and children, and the consequent blindness, but will also help in a measure, the control of this disease and of syphilis in adults, by timely diagnosis and judicious treatment. The disposition of the Health Department to make gratuitous bacteriologic examinations and Wassermann tests for venereal afflictions will doubtless help very materially not only the therapeutic but also the prophylactic measures.

To my mind these admirable resolutions of the Board of Health would be strengthened in their efficiency if the afflicted could be assured, and I mean particularly that class of patients who are dependent on free treatment in public institutions, that the records at the Health Department concerning venereal diseases will not be open to inspection by the public and that only legally authorized individuals can have access thereto. The venereally afflicted patient without means should be made to feel that he is treated by the official medical authorities with the same secrecy as the private patient of physicians. To my mind it should distinctly be specified by law under what condition the records of the Health Department concerning communicable and infectious diseases may be inspected, and by whom.

The importance of educating young men and young women regarding sex relation has been so often advocated that I think we do not need to dwell on it here except to emphasize its importance in a few words by saying: knowledge of a possible peril confers in this instance the greatest motive power for prevention. In connection with education in sexual relations and venereal diseases in school and college, I would suggest that a community of any size should have a public museum of hygiene including wax models, showing not only the physiologic development of the

normal child, but also the results of venereal vice. Nothing is more demonstrative and educating than such ocular evidences. May I say right here in parenthesis that we cannot expect parents to be the educators of their children in all that pertains to these important subjects without having given the father and mother an opportunity to educate themselves.

What other modern conceptions do we have concerning venereal diseases? Physicians and lawmakers are almost unanimous in the opinion that people afflicted with syphilis or gonorrheal diseases in the infectious stages should not be permitted to marry. The willing or conscious communication of a venereal disease to any one should be punishable by a severe fine and an incarceration until the disease is cured.

Knowing that the so-called "social evil," which I prefer, however, to call the "social ill," is in a very large measure responsible for the spread of venereal disease, we must devote a few words to this topic. But since I have chosen to change the name from *evil* to *ill*, let me tell you briefly what led me to this conception. The general understanding of the word "evil" implies that the perpetrator of the act which is supposed to be an evil one is an evildoer or criminal. I believe it is neither just, humane, nor even consistent to call these offenders, male or female, criminals in every instance. Before an audience of this kind I do not need to state that there are numerous cases in which the unfortunate woman is really innocent, if not before the laws made by man, at least before the higher divine laws. That there are also instances when the other sex, the innocent and unknowing youth, has fallen a victim to the experienced, unscrupulous courtesan, often old enough to be his mother, is also too well known to need detailed mention.

When not applied to physical conditions, the word evil is usually understood as wicked conduct or criminal disposition, while the word ill or illness means a derangement and an unwholesome condition. By rights, we should not even call prostitution *the* social evil or ill, as it is by no means the only one, for surely alcoholic intemperance and gambling must also be considered social evils responsible for fully as much misery as prostitution.

Presuming, then, that you will grant me the privilege of substituting the name "social ill' for "social evil," what definition would I wish to give of this term in order to convey in concise words my reasons for the change? I would say the social ill is an abnormal, or, figuratively speaking, a pathologic condition which results from disturbances or failures of sociologic functions of the individual, for which in few instance the individual alone, but in the majority of cases our social fabric, is responsible.

Let us now rapidly trace some of the modern conceptions of the etiology of prostitution. I cannot, nor will I, subscribe to the cruel statement made by some sociologists and syphilographers that many women are born prostitutes. There is no evidence for this assumption. On the contrary, from the experience I had with this class of cases, when I was in general practice, I am willing to testify that the majority of

these unfortunate women, when they are mothers, work and slave that their daughters may have a happier lot than was their own.

All physicians know, of course, that just as there are boys born with an adherent prepuce, so are there girls born with an adherent clitoris. When these trifling physical defects are not corrected they may lead to the habit of masturbation in both sexes and later on to abnormal sexual appetites. When operated on, the acquired pernicious habit usually ceases. But if, as is asserted by some authorities, this physical defect predisposes the female child to prostitution and the male child to corresponding abnormalities, then by all means let us make it a practice to have every child, male or female, carefully examined and treated for such possible defects by a competent physician.

Hysteria is also mentioned as a predisposing cause. Any hysterical manifestation in a child should have timely and prompt treatment. All other factors in the etiology of prostitution are simply social. Child labor, underpaid woman's labor, misery and poverty are recognized to-day by all sociologists as the principal predisposing causes to prostitution, and there is but one remedy for all: child labor must be done away with and the woman who is dependent on her own resources must be enabled to earn enough money to support herself respectably. When such a policy will become universal and not be confined to one state or one country, then the very praiseworthy effort on the part of the United State government to abolish the white slave traffic will be crowned with success, because there will be no slaves to traffic with.

Last, but not least, let me not forget that prostitution is as much, nay, even more a man's problem than a woman's problem. It is we, the so-called stronger sex, the creators of our social fabric, the lawmakers and those who enforce the law, who are responsible for this blot on civilization. The fact that prostitution existed in antiquity is no excuse for its existence to-day. There is much, much for us men to do, whether we are physicians, social workers, or plain citizens fulfilling our tasks as such toward bringing about a happier and saner state in regard to our sex relations and our attitude toward our sisters, unfortunate, but in my opinion not deserving the name "fallen."

Let me frankly state that one of the things I conceive of as tending to do away with the social ill would be early marriages and small families. No child should be brought into this world physically, mentally, and socially so handicapped that its rise to a true, sane, sound, and useful member of society is an impossibility.

What can we do to-day to help stem the misfortune, disease and misery brought about through the social ill? Take to heart what I have already said and carry out these recommendations gradually and persistently and I am sure you will help in the sane solution of the problem. Where prostitution with all its evil influences exists, use repressive rather than oppressive measures, and above all hold out the helping hand to those who wish to be helped. Open, if you can, to-morrow a house to which the woman of the street, tired of the life she has been leading, may escape; where she will be received with open arms by sisters and brothers,

the children of the same God; where, if she is diseased, she can be healed; where, if she is uneducated and uncultured, she can receive education and culture; where she can forget the past and where she can learn to look to the future and to her reestablishment as a respected member of society with absolute certainty. But in the name of mercy, I beg of you not to call this house a Magdalen Home; call it a house, or simply a home, call it anything but that. It is my privilege to be one of the incorporators of a house in New York City such as I have just described; we call it the Waverley House.

I know the pessimists will tell me you can never, never, reform a prostitute. Well, perhaps not all, but if I tell you the results of two years' work at Waverly House, in how many instances we succeeded in curing the social and physical ill of these women and created opportunities for work and employment in other spheres, you will pardon my optimism. Of 300 women who passed through this house, either by self-commitment or on probation granted by the court, 119 have changed their previous mode of life, have become happy, honorable, and useful members of society. Miss Maude E. Miner, an official probation officer, who is at the head of this institution because of her experience and devotion to the cause, has been in constant communication with these 119 girls. Every letter from them expresses their gratitude for having been enabled to leave a life in which they were so thoroughly unhappy. And last, but not least, this place of refuge for those unfortunate women means in many instances freeing them from the men who lived on their shame and were so often responsible for their enslavement.

One more word on what we can do now. Every general hospital of any size should have a ward set aside for the treatment of venereal diseases. I do not believe in special hospitals for the treatment of venereal diseases. Few would voluntarily enter. But if it were known that any one could be treated in a special ward of a general hospital, that he could be sure that his identity would only be known to the physicians and higher officials of the hospital, most of the objections which the venereally afflicted man has to-day to hospitalization would be done away with and prophylaxis and proper therapeutics would help to diminish the fearful consequences of hidden and neglected venereal diseases.

TUBERCULOSIS

My last subject is tuberculosis, although it is not the least. Statistics are just a trifle more reliable concerning tuberculosis than they are regarding alcoholism and venereal diseases, and we can say something definite of the magnitude of the problem. From available statistics it is estimated that 150,000 people die annually from tuberculosis in the United States, and the National Association for the Study and Prevention of Tuberculosis reports that more than $14,500,000 was spent in fighting tuberculosis during the year 1911. By far the largest item of expense was that for sanatoria and hospitals. For the erection of institutions of this kind, more than $11,800,000 was required; dispensaries for the examination and treatment of tuberculosis spent $850,000, and

associations and committees in their educational campaign against tuberculosis spent $500,000. The remaining $1,300,000 was spent for treatment in open air schools, prisons, and hospitals for the insane. Appropriations of more than $10,000,000 for tuberculosis work in 1912 have already been made by state legislatures and municipal and county bodies.

To say that at least $50,000,000 is invested in buildings and equipments in the United States by state, municipal, and private philanthropy for the sole purpose of caring for the tuberculous poor would be a low estimate, and in this sum is not included the money invested in sanatoria for the well-to-do. The $15,000,000 above mentioned for running expenses likewise does not cover the actual money expended for the care of the consumptives of this country; still less does it include the economic loss to our country by the premature death of tuberculous individuals.

Of the estimated 150,000 who die annually from tuberculosis in the United States, I venture to say 50,000 have been bread winners, and estimating the value of such a single life to the community at only about $1,500, we have a loss of $75,000,000 each year. Another third of the estimated number, I venture to say, represents the children at school age. They have died without having been able to give any return to their parents and to the community. Making the average duration of their young lives only seven and one-half years, and estimating the cost to parents and to the community at only $200 per annum, the community loses another $75,000,000 because it has not prevented a preventable and curable disease in childhood.

I am not trying to figure in dollars and cents the loss of little babes who die in infancy. The suffering thus caused to parents can no more be calculated than the suffering, misery, tears, and agony of those afflicted with the disease itself. But I trust that the cold figures I have given showing the economic loss, besides the suffering which is caused in body and mind to untold numbers because of this disease, will inspire you and me to look a little closer into the origin of tuberculosis, and if possible to inaugurate more efficacious prophylactic and curative measures, so that we may have more frequent cures and fewer relapses.

To what degree venereal diseases are responsible for tuberculosis cannot be statistically proved. On the other hand, we know from statistics of French sanatoria for tuberculous children that 25 per cent. of the non-tuberculous parents of the children admitted were alcoholic to a greater or lesser degree. In my service at the Riverside Hospital-Sanatorium where, it is true, I do not receive the very elite of patients but many forced-in cases, not a few picked off the street or from low-class lodging houses, I have among my male patients 66 per cent. who acknowledge being addicted to the use of alcohol. Whether they became tuberculous because of alcoholism, or alcoholic because of being tuberculous I am not prepared to say. The belief that tuberculosis can be cured by whisky and prevented by the same beverage, is still a prevalent one and needs combating.

Direct bacillary transmission of the tubercle bacilli from parent to child cannot be denied, although I admit that it is of rare occurrence. Post-natal infection, on the other hand, from either mother or father is, alas, a most frequent cause of tuberculosis. The child of a tuberculous parent comes to this world handicapped by an inherited physiologic poverty and then being constantly exposed to a postnatal infection through the close proximity of the tuberculous parent, it has little chance to survive. If it does survive it rarely reaches adult life. If in infancy it has the misfortune of receiving the milk from a tuberculous cow, its chances of dying from tuberculous are increased by 10 per cent.

In connection with this inherited physiologic poverty as a primary cause of tuberculous predisposition, I should like to discuss for a few moments a subject which I have not seen mentioned in any of our old or modern text-books on tuberculosis. This predisposition has, I believe, as much a social as a physiologic basis. In taking the history of tuberculous patients, I have made it a practice for years to always ascertain the size of the family from which the individual comes and whether he was the first, second, third, fourth, fifth, etc., born of the family. This careful history-taking has revealed the fact that the great majority of tuberculous individuals coming from large families were the younger ones. It is nearly always the latter born who contract tuberculosis.

There is no doubt in my mind that perhaps the age of the father, but most frequently the system of the mother worn out by repeated pregnancies, can contribute to the physiologic poverty of that latter born child. This child comes to the world handicapped physiologically. In many instances, when the family, because of the number of children, has been reduced to a state of relative poverty, the latter born children cannot receive or have not received either the good care or the good food which was given to the first born at a time when there were not so many mouths to feed. This condition might be considered the sociologic reason of the child's predisposition to tuberculosis added to the physiologic causes above described. I have in my records a number of such latter born individuals who had become tuberculous in adult life when there was no tuberculosis in their family, but the personal history revealed always a state of health below par from early childhood.

On the well-known direct sources of infection of tuberculosis such as sputum, bacilliferous droplets, etc., I shall not dwell in this paper. There is only one recently brought forward which might be considered and I speak of it only because I disapprove of it. Poncet of Paris claims to have found the tubercle bacilli in the perspiration of consumptives. His experiments have not yet been corroborated sufficiently to make it necessary to consider this possible source of infection an absolute fact. If it really occurs, the cases from which tuberculosis is contracted from this source are surely exceedingly rare, and in view of the existing phthisiophobia, I do not think it is best to scare the public and increase the prejudice against the tuberculous by saying that the touch of their skin might give rise to the disease. Ordinary cleanliness of the skin of the

phthisical patient is certainly sufficient protection against this source of infection if it does exist.

Now, as to some of the modern medicosociologic conceptions of ways to abolish the predisposing or antenatal causes, the postnatal infection and the frequent relapses responsible for the propagation of tuberculosis. Let me discuss first the frequent relapses. From a financial standpoint, every patient discharged as cured from a public institution, who relapses, represents a loss of from $200 to $500 to the community, because the money which had been spent for his cure has been spent in vain. Why do we have so many relapses in spite of the great financial sacrifices which our states and municipalities make for the cure of tuberculosis?

What is the cause of these relapses and how may we remedy them? When a patient, after a six to eight months' sojourn in a hospital, is discharged as a cured or arrested case and is obliged to return to the same unhygienic environments or resume the same occupation which, combined or singly, were responsible for his contracting or developing tuberculosis, the chances for him to become tuberculous anew are indeed great. The patient discharged from an institution should be the subject of a most careful supervision and control. Those of us who have some experience in tuberculosis know only too well that six or eight months' treatment rarely suffices to cure the patient absolutely. Thus, if a municipality or state does not wish to spend about one-third of the tuberculosis appropriation in vain, let them establish what I would like to call intermediate stations where all kinds of occupations may be pursued, but under exceptionally good hygienic conditions, with as much outdoor life as at all possible and certainly outdoor sleeping so as gradually to harden the patient discharged from the sanatorium, and make him resistant to a new invasion of the bacilli. In the majority of instances he may then safely return to his former occupation, and with the sanatorium training and his life in the intermediate station, become again a most useful member of society and bread winner.

What may we do to abolish the predisposing causes and general postnatal infections responsible for the propagation of tuberculosis? Every member of any family in which a tuberculous patient has been discovered must be examined and periodically reexamined, and if found tuberculous he must be treated and cared for. Such families, more than others, need sanitary supervision. If the bread winner has been removed and the family is poor, special relief must be given, for the underfed and badly housed are more prone than any others to contracting tuberculosis. We should strive to discover every possible center of infection and make it innocuous, but in thus persecuting tuberculosis we must not persecute the tuberculous.

Our social reformers will tell us: the first thing you physicians must do is to prevent the tuberculous from marrying. This is easier said than done. We know, of course, that there are a number of states in which a certificate of health is demanded before a license is issued, and recently some brave clergymen, foremost among them the Very Rev. Dean Walter Taylor Sumner of the Protestant Episcopal Cathedral of SS. Peter and

Paul, of Chicago, have declared that they would bar all marriages unless the couples were armed with a physician's certificate saying that they have "no trace of insanity, tuberculosis, or other communicable disease." If I have the quotation correct, I would object to the wording of this declaration for, if the reverend gentleman really means that he will not marry any one who has even a trace of tuberculosis, he will have a chance of performing the ceremony relatively rarely. What the old German *Geheimrath* said many years ago still holds good. I refer to the often quoted words *Am Ende haben wir all ein bischen Tuberkulose,* which might be freely translated, "After all we all have or have had a little tuberculosis."

A mere trace of tuberculosis should not bar any one from marrying and propagating, but with a distinctive lesion, likely to become acute at any moment, or with a very strong predisposition, marriage and procreation should be deferred until the prospective husband or wife is cured. I cannot speak for the experience of others, but as for myself in a good many years of consultation practice, I have had occasion to prohibit marriage a good many times. Sometimes those who had sought my advice obeyed it, more frequently they did not and I have now come to the firm conviction that neither state law, clergyman's protest, or physician's advice will prevent people from coming together as husband and wife if they want to. I grant that there are exceptions, but these exceptions are few.

A somewhat easier task is it when we are confronted with a tuberculous married man or woman whom we desire to convince that as long as he or she is actively ill with the affliction they must not have any children. Such advice the average tuberculous patient is willing to take, but of course failures are frequent. What are we to do? This is one of the most important phases of eugenics. We spent last year nearly $15,000,000 for the cure and prevention of tuberculosis in the United States and we still lose annually 150,000 people from consumption, which represents an economic loss of $150,000,000. This will continue as long as we allow conditions to prevail as they are now almost universally.

Has the time not come for a radical and energetic policy for dealing with the various phases of the tuberculosis problem, including the procreation of a tuberculous race? Statesmen, lawmakers, city fathers, school authorities, employers, philanthropists, physicians, and the people at large, all can help in this holy war against a common foe more terrible, more destructive, more costly than any war known in the history of men.

Besides pleading with all the earnestness I am capable of for all means to combat tuberculosis, for which others and I have pleaded before, such as early diagnosis, compulsory registration, periodic physical examination of all school children and college students, the establishment of maternity sanatoria, children's sanatoria, sanatoria for early cases, hospital sanatoria for the advanced cases, the forcible segregation of all advanced or early cases when by their condition or conduct they are a menace to the community, dispensaries, labor bureaus for the tuberculous, agricultural and horticultural colonies, better housing, better

home hygiene, better ventilation in factories, stores, offices and work shops, state insurance against accidents, old age and disease, including tuberculosis, periodic physical examination of all employees, official and private, for tuberculosis, supervision of food supplies and housing, abolition of child labor, more open air schools and colleges, utilization of city roofs for playgrounds, more outdoor play for all children, and education in popular hygiene for all people, I plead with you for vasectomy for all tuberculous male patients who are willing to submit to this operation. I would make this operation obligatory for any one who is acutely tuberculous and insists on marrying. I would advise the ligation of the fallopian tubes for all female patients in the same situation, or similarly afflicted. I would teach even slightly affected tuberculous perents or married people not only all the details of prophylaxis so that they may not infect each other, their children, or others, but would make it also a sacred duty to teach them how not to procreate while either one of them is acutely afflicted with the disease. To this end I would go so far as to urge parents, even when they feel themselves apparently well and strong and recovered from a tuberculous lesion, not to decide on having a child without both having submitted themselves to a careful physical examination. Only when found in real good health as a result of a careful examination by a competent practitioner, should they feel that they have a right to procreate a race.

I have already expressed my opinion to the effect that for the noncured syphilitic and the unredeemable alcoholic the procreation of his type should be made impossible. That I dare to include in this class the actively ill tuberculous individual may sound revolutionary and to some it may seem a shock, but I know that many in their heart of hearts will agree with me. To make of the human race beings strong in health and vigor, sound in mind and body, free from unnecessary care and preventable diseases, should be a religious duty of the physician of this age.

To end a paper of this kind with figures may seem tedious, but we are pleading at this time for a federal Department of Health whereby the problems with which I have endeavored to deal, although only too inadequately, shall receive the deepest study and sound consideration with a view to their solution.

As stated above, the people of the United State spend annually $20,000,000 for taking care of the drunkard. This expenditure does not include the maintaining, often for a life time, of 25 per cent. of all the insane, epileptic, or feeble minded whose disease may be traced to alcoholism; nor the maintenance of 25 per cent. of all criminals in the workhouses, reformatories or prisons, who committed their crimes under the influence of alcohol. The cost of venereal diseases is beyond calculation. A large percentage of the venereally diseased land in the insane asylum and thousands of little children are rendered blind and helpless forever. The human sorrow caused by the venereal peril is far greater than all the money sacrifice, and the same may of course also be said of alcoholism and tuberculosis. To help to diminish the sorrow and suffering caused by all these diseases, to decrease their virulence, to study their cure, to

help to save to the commonwealth, that is to say to the people at large, the thousands of millions of dollars which these and other preventable and curable diseases cost, we have asked for the establishment of a federal Department of Health. This is the one medicosociologic conception without the realization of which we shall be unable to solve the three great problems before us.

May I conclude this all too lengthy paper with one more thought? After having given you some of the modern medicosociologic conceptions of the three great diseases of the masses, let me state as "finale" my conception of the modern physician, as I see him rising before me. The physician of the future will have chosen his profession because of his devotion to science and humanity; he will be physically and mentally equipped for the task. Our social fabric, politics of state and nation, will have changed and our material wealth, because of greater honesty, greater efficiency, and fewer untimely deaths, will have increased at least to such an extent that the naturally gifted boy or girl who feels in himself or herself the divine calling to be a physician, be he or she of poor or rich parents, may be educated in the state university at state expense. After careful preparation and study and years of hospital service as intern, a remunerative position will be assured to this well-trained physician. He will take care of the sick as an officer of the state, paid by the state and not dependent on the fees received from patients. He will have helped in saving the nation an expenditure of untold millions by guarding the people's health, by preventing epidemics and endemics, by teaching the people how to live healthy, happy lives and how to be strong and vigorous in mind and body — men and women in every respect an image of their creator, noble citizens of a great republic. This because the ideal physician will at last have come to his own, a conqueror of disease, a savior of his fellowmen, himself an example of the highest type of man. Let us hope that he may appear on the scene before you and I lay down our arms.

TUBERCULOSIS WORK IN EUROPE*

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The Irish have an expression that "far off cattle have long horns," which is only another way of expressing the thought that "distance lends enchantment to the view." Because European countries are older and more particularly for the reason that many of them have been engaged in the warfare against tuberculosis longer than we have in this country, we have very naturally looked to them for leadership and assumed that their methods were right and have blindly followed them without question. This attitude on our part has led us into serious blunders. This

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assertion is based on a recent investigation of tuberculosis work as it is being conducted by our transatlantic brethren, and applies with peculiar force to our slavish adherence to European standards of architecture in the construction of tuberculosis sanatoria.

The statements herein made are based on definite data, and the criticisms are unprejudiced. I found that while we have an exaggerated view of the progress they have made, they likewise have a distorted view of our work, and in both instances, the mistakes which each have made have been overlooked, and the really meritorious things done have been magnified. Viewed at close range a better perspective is gained and defects observed that could not otherwise be discovered.

I had already made quite a thorough investigation of actual conditions in this country, particularly from the sanatorium standpoint, and found there was much knowledge that could only be gained by personal investigation.

The primary object of my recent visit to Europe was to investigate actual working conditions, particularly from the standpoint of sanatorium construction and treatment, and incidentally to attend the International Tuberculosis Congress at Rome. What I have to present is a report on the conditions as I found them, based on rather an intimate personal experience with the work in this country.

Until within the past year Germany has taken the lead, not only in scientific work, but in provision for sanatorium treatment. Germany has more sanatoria and has made greater advance in prevention and placing the early cases under treatment than any other country in the world. During the past year Great Britain has passed what is known as the National Insurance Act out of which is appropriated $7,500,000 for tuberculosis work alone. The plan proposed is the most comprehensive thus far attempted by any government, and the appropriation larger. The act provides for compulsory notification, sanatorium treatment for the curable, hospital care for the incurable, regulation of milk-supply, partial support of family during invalidism, special provision for infected children, increased attention to education along health lines in schools and colleges, and better houses for the poor. The total amount of funds available for this whole scheme is $12,000,000 for the first year, which on a per capita basis would be equivalent to about $30,000,000 for this country. The committee which has been appointed to work out the plans in detail recommend, among other things, that a dispensary be provided for each 150,000 of urban population, and that sanatorium provision be made on the basis of one free bed for each 5,000 of population.

Perhaps a better idea of sanatorium conditions can be obtained by giving a detailed report of a few of those I visited.

Mt. Vernon, Northwood, England, accommodates 150 patients; none but early cases admitted; the outlay very elaborate and extravagant; total cost $6,000 per bed. It was built by a rich diamond miner of South Africa. Has no endowment and must be supported by subscription. Magnificent buildings and grounds, including large and well lighted laboratory, but no equipment to speak of. Can only do ordinary labora-

tory work. Treatment only hygienic. It is a serious question whether this institution can be maintained much longer by public subscription.

King Edward Sanatorium, Midhurst, sixty-five miles from London. Built by rich friend of King Edward the Seventh, who allowed the use of his name without knowing the plans in advance. No one knows how much it cost, but reputed to be not less than $10,000 per bed. King Edward did not know what had been done until he was asked to dedicate it. It is said he was amazed and outraged when he saw what had been done in his name, and only barely repressed publicly expressing his disapproval. In private he did not hesitate to say that it was a stupendous piece of folly, and regretted exceedingly that his name should bear the odium of being connected with it. This is one of the English institutions which is most frequently referred to and which has been accepted as the ideal standard by many who are not familiar with the facts. This sanatorium is in reality a monument to the King and only incidentally for the cure of tuberculosis. It is the most conspicuous example of extravagant folly in the whole history of the tuberculosis movement.

Frimley Sanatorium, Sussex County, adjunct to Brompton Hospital, London. Located three miles from railway station in pine woods. Rough, unproductive land. Location unsightly. Built very much on same lines as Mt. Vernon, Northwood, only not so expensive. Cost about $3,500 per bed. Graduated labor distinguishing feature. Apparently logical, and made possible because none but early cases are admitted. Institution new. Grounds rough, making vast amount of work necessary. It is questionable whether the plan of graduated labor can be conducted after improvements are all made, as the land is not suitable for farming, excepting at enormous expense for subduing and fertilizing.

Benenden Sanatorium, sixty-five miles from London; for industrial classes only. Eight miles from railroad. Unforbidding location. Buildings economically constructed, costing, including land and equipment, $750 per bed. Graduated labor. Mostly farm and garden work. None but incipient cases received. Treatment up to date so far as finances will permit. Model institution of its kind and the only one in Great Britain built along economic lines.

There are numerous small sanatoria throughout Great Britain, both private and public, but none of them doing more than ordinary work. Private sanatoria are for the most part rather cheap affairs doing crude work and conducted more on the boarding house plan than as scientific sanatoria. The institutions specified, particularly the more expensive, all have good laboratories, but little or no equipment or funds to conduct them. The same is true of maintenance in every particular. The King Edward and Mt. Vernon, Northwood, are instances of rich nabobs glorifying themselves by erecting monuments to themselves under the guise of philanthropy and letting the institutions struggle for an existence.

There is no factor in the treatment of tuberculosis either from a scientific or economic standpoint of more importance than sanatorium architecture and none which has received less attention or in which more unscientific and economic blunders have been made. England copied

Germany's mistakes and we have copied the mistakes of both countries. The most serious and expensive mistake which has been made in the tuberculosis propaganda throughout the world is in the irrational and extravagant expenditure of money in the erection of massive buildings for the treatment of tuberculosis. The public have become so accustomed to every philanthropic outburst being associated with some palatial building that it is high time we should urge that the current of philanthropy find expression in the modest and comprehensive scheme of practical medical men, rather than in the grand and ambitious methods of the builders. It is a strange anomaly that charity patients are in many instances provided with better accommodations than even the well to do could afford if these institutions were conducted on a business basis. Such a plan is as irrational as it is unscientific, and has a tendency to break down the whole system by unnecessary expense and it is to correct just such mistakes as have been made, and will continue to be made, until the public have a better understanding of the necessities of the situation, that makes it necessary in connection with the tuberculosis propaganda to conduct a campaign against such extravagant and irrational methods of applying the treatment. There are other large expenses connected with the campaign against tuberculosis and all the funds at our command should not be exhausted in building sanatoria, which is only one factor in the warfare. Where there are so many things to be done we should conserve our resources. They certainly should not be exhausted or wasted in the construction of buildings, which are not only not needed, but are worse than useless. Thus far in all countries sanatoria have absorbed the major part of the funds appropriated, leaving little or nothing for anything else, not even the support of the institutions themselves.

I would not feel so free to criticize after having been treated so courteously by the officials of these several institutions were it not for the fact that I find that those in charge as well as physicians and sanatorium officials everywhere are unanimous in their condemnation of this extravagant expenditure. This being true, it is interesting to know how the custom became established.

Brehmer, Detweiler and other pioneers in the sanatorium movement, although advocates of fresh air, at first had rather crude and imperfect ideas as to its application, which led them to make many mistakes judging by present standards. One of these was to follow the conventional hospital plan of architecture. As a result all the earlier institutions are massively built and only with a view to applying fresh air during the waking hours. As the movement progressed medical men saw that the massive building was irrational both from a scientific and economic standpoint, and set about to devise simpler styles of architecture. This has necessarily taken a number of years to accomplish, and there is much yet to be done before ideals are reached. In the meantime the tuberculosis sanatorium became more popular. The demands of the situation became more and more apparent with the result that philanthropists came to the aid of many communities in supplying all or part of the funds necessary for their construction. Instead of consulting practical sana-

torium officials and keeping pace with the rapid progress made by consulting practical men they invariably placed the construction of these institutions in the hands of architects who knew nothing of the scientific demands of the situation, with the result that palatial monuments to the donors have been erected, instead of sanatoria for the sick. The result has been to establish standards that others have blindly followed on the assumption that practical men were responsible for this style of architecture, hence it must be necessary. It is a serious question whether or not these so-called philanthropists have not done the cause more harm than good.

The problem of housing tuberculous patients is so new and radically different from the housing of any other class of patients that it is not surprising that those charged with the responsibility of the expenditure of public or private funds are at a loss to know how to proceed. These men are usually laymen and very naturally the first step they make is to visit institutions already in existence. These have for the most part been unnecessarily expensive. The result is that these mistakes are duplicated where there are sufficient funds at their command, or the whole plan is abandoned where there is not. An illustration in point. Five years ago the legislature of a neighboring state made an appropriation of $75,000 for a state institution. The Board of Control was composed of three intelligent laymen. They had absolutely no conception of how to proceed and very naturally visited some of the elaborate institutions in our eastern states. They found that no state had an institution that had cost less than $250,000, and many of them much more. The same was true of other sanatoria, whether public or private. They had had great difficulty in securing the apparently modest sum of $75,000 and knew that it was utterly useless to attempt to secure a larger appropriation, hence were about to abandon the whole enterprise. I was called in consultation and insisted they had sufficient funds to make a good beginning if they were only expended properly. They were advised to construct simple, inexpensive buildings. My advice was followed and within less than a year they had an institution in operation for the accommodation of 100 patients at a total outlay for lands, buildings and equipment of $90,000. With the experience since gained, I am sure this institution could have been duplicated for even less. We are indebted to an English physician for suggesting the sanatorium treatment; to the Germans for systematizing it, but it is left for the practical Americans to simplify it and put it on a more economic basis.

If any of these extravagantly built institutions had been endowed with what has been spent uselessly in buildings it would be amply sufficient to support them liberally and still allow a good margin for scientific research. This wasteful extravagance is the result of the dominating influence of the men of money over the men of science.

The application of our present knowledge of tuberculosis is practically a new proposition, and it is to be expected that the inventive genius of the American will work it out to better advantage than the less inventive and less adaptable Europeans. As a matter of fact the Europeans freely

confess that in all problems involving organization and adaptation, we are expected to lead.

While there is practical unanimity throughout the civilized world as to the treatment of pulmonary tuberculosis, there is a radical difference between methods of treatment of the so-called surgical forms of tuberculosis in Europe and the United States.

In Europe, especially in France and Germany, quite as much attention is paid to closed and surgical tuberculosis as to the pulmonary form of the disease, while in this country this class of cases is practically neglected. The treatment in Europe is almost exclusively hygienic and dietetic. Operative procedures are only resorted to in exceptional cases. For example, in one institution of 1,100 beds exclusively for children under fifteen years of age, I was informed that not more than six cutting operations had been performed in the past three months. These institutions are usually located along the seashore. One illustration will suffice for all.

Berck Plage, located on the north shore of France, thirty-five miles from Calais; splendid beach, wide expanse of sand; village of 10,000 people which includes 4,000 cases of surgical tuberculosis. The city of Paris supports a very large institution at this place. Plan of buildings is good; while substantial, not necessarily expensive. Abscesses are aspirated and injected with iodoform. Glands are never operated on unless discharging, and then are merely cleaned out thoroughly and dressed antiseptically. Operations on long bones more frequent, but only then when there is extensive necrosis or abscess formation. Operations radical when indicated. Plaster casts in suitable cases.

There are several charitable institutions located here and hundreds of private patients flock to this village from all parts of Europe, who for the most part live in pensions. A novel feature of the treatment is the carriages constructed especially for patients in casts, which permits them to move about even when compelled to maintain constantly a prone position.

In Switzerland, Germany and Italy there are many institutions for the treatment of surgical tuberculosis particularly in children, and the results of treatment are very satisfactory. In France the virtue of the treatment is supposed to reside in the sea-air. In Switzerland, the mountain air, while in Germany and Italy it is simply air. It is well known that in this country about all we do for our surgical cases is to operate on them and place them in the wards or rooms of a general hospital. My personal opinion is that we operate too much in this country, and they operate too little in Europe, and that the best results would be obtained by supplementing the surgical skill and technic of the American surgeon with the hygienic-dietetic, tuberculin and vaccine treatment of the Europeans. They occupy one extreme and we the other. It seems reasonable to assume that the truth lies somewhere between the two extremes. At any rate their results are certainly far superior to ours.

The International Congress on Tuberculosis was held in Rome April 14 to 20, 1912. There was no striking discovery presented at the Congress

similar to that of Robert Koch when he announced the non-identity of human and bovine tuberculosis. There was very little of what can strictly be called original work, and none of it of epoch-making importance. The suggestion which attracted the most attention was the discovery of the relation of bovine and human tuberculosis. This was discussed very thoroughly in the conference which preceded the Congress proper, and the discussion was participated in by the master minds of the leading European nations. The discussion was characterized by eminent fairness and a disposition on the part of all to arrive at the truth. During the past three years and a half numerous investigators have been at work on this very important and very practical problem, and while the leaders are not yet in perfect accord they are much nearer together than they were at the last Congress — near enough at least to make it possible for them to agree unanimously to the following resolution:

Resolved, First, the prophylaxis against tuberculosis must principally be directed against the suppression of contamination from man to man, and principally in the family.

Second, the contamination of man by bovine infection is of less frequency, nevertheless it is necessary to continue all measures against infection of bovine origin.

By way of explanation it may be said that this is a compromise resolution and really represents the conservative view still held by the German school, who, while willing to admit the infection of man from bovine sources, do not regard it as a serious menace. The English and Scandinavian investigators regard it as a serious menace, with the French occupying a position somewhere between these two extremes. In the discussion there were certain local conditions brought out in the several countries which may account for the differences in the findings of the several investigators. For example, in Germany and France milk is usually cooked while in England and the United States it is usually taken raw. There also seems to be more bovine tuberculosis in some countries than others, and especially in the colder climates, and also more tuberculous cattle in different localities in the same country. It may be found later that these local conditions have an important bearing in certain localities, and if so, it will tend to fortify and strengthen the views expressed in the resolution.

The work of the British commission may fairly be regarded as the most reliable. Their work has been far more comprehensive and open minded. The British Commission have no preconceived views, but are simply seeking the truth, while the German schools are apparently followers of Koch, and seem to be seeking to establish his views rather than arrive at the truth.

The suggestions that attracted most attention from the standpoint of treatment was a revival of the method of treating unilateral pulmonary tuberculosis by the production of artificial pneumothorax, certain aspects of immunity and heliotherapy. It was significant that very little was said on the influence of climate *per se* in the treatment of tuberculosis,

except surgical forms, in which the French insist on the virtue of sea air, while the Swiss insist just as strongly on the specific influence of mountain air and sunlight. Inasmuch as they are all securing substantially the same results, it is fair to assume that the final conclusion will be, as in the treatment of pulmonary tuberculosis, that the virtue of their methods consists in fresh air and sunshine rather than any peculiar attribute, either of sea air or mountain air. Both nations are to be congratulated on their excellent work in this important and much neglected branch of the work. The United States seems to be behind all the leading European nations in making provision for the systematic treatment of surgical tuberculosis.

While but little that is new of definite value was developed by the Congress, it was interesting to note the decline of former views with regard to the influence of climate and the growing sentiment, not only in favor of sanatorium treatment, but the further fact that the results by other methods are unsatisfactory.

The hygienic and dietetic treatment of tuberculosis seems to be accepted in Europe as fundamental and that whatever changes are made will be with the present methods of treatment as the basis. The use of tuberculin as a diagnostic and therapeutic agent is no longer questioned by those in a position to speak authoritatively. Vaccines and serums are regarded with favor, but are still in the experimental stage.

A dominant note of the proceedings was that instead of looking for a specific remedy for tuberculosis, the protean character of the disease was recognized, and instead of directing our energies to the discovery of a single remedy or method, intensive study is being focused on the several methods which must be devised to meet varying conditions.

If nothing new of practical value was developed, the work of the Congress was none the less notable. Several new lines of attack were developed, and while practical results have not been obtained, the indications are that some of them will prove successful. Be this as it may, the most encouraging feature of the Congress is shown by the activity which must result in vastly improved methods of treatment, as has hitherto been done in other diseases, which seemed as formidable as tuberculosis now does.

In all the countries of Europe they have passed through that period of over-enthusiasm as to results of treatment through which we are now passing and which is so discouraging to practical workers in this country. The sanatorium has taken its proper place in the fight against tuberculosis and sanatorium physicians are not embarrassed by being expected to accomplish more than is possible and criticized because they do not meet the demands of an over-enthusiastic public.

In the matter of governmental control European nations, and especially Germany and Great Britain, are far in advance of the United States. In the matter of social organization we are in advance of them, and the outlook far more favorable for effective work in the future. This is perhaps due to the differences in political and social conditions. It is easier to enforce police regulations in European nations because their

form of government is more paternal. On the other hand it is easier to inaugurate and conduct social movements in the United States for the reason that we do not have to overcome the class distinctions which obtain in even the most liberal European nations. It is generally believed even by Europeans that more can be accomplished by education than by legislation, although each must supplement the other, hence our transatlantic brethren are looking to us to take the lead in this great warfare which, for the most part, must be conducted along educational lines.

Note.—That portion of this article referring to the International Congress on Tuberculosis is taken from the author's report for the *Journal A. M. A.*

THE VALUE OF FIELD WORK IN THE STUDY OF HEREDITY IN MENTAL DISEASES*

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Since the discovery by Gregor Mendel, the German monk, in 1866, of the laws now so well known, much valuable data have been collected and many experiments in plant and animal life conducted. But not until within the last few years has any attempt been made to study the hereditary features of insanity in the same systematic manner; in fact, it can be said that only within the last two years has any systematic work been accomplished in regard to mental diseases, although it has been known to all engaged in the study of insanity for years that heredity plays a very important rôle in the etiology of the various psychoses.

For years statements have been made regarding heredity in insanity and opinions given by those connected with insane hospitals, but when one reviews the data on which these statements are based one is struck with the fact that these data are wofully incomplete, inadequate and often inaccurately taken. Not only does this apply to the older histories, where no attempt had been made to find the facts, where the statements of the committing physicians were taken as a basis for statistics collected in the hospital, but even in hospitals where modern methods can be said to be employed, and where an attempt is made to obtain accurate histories of the patients admitted, the same criticism of the facts regarding heredity can be made. For even with the most conscientious work of the physicians on the histories taken in the hospital at the time of admission of the patient it is often impossible to obtain information relating to more than brothers and sisters, parents and sometimes grandparents of the patient. Often the husband or wife of the patient is the only one to whom we have access in the hospital for information, and frequently they know very little about the family histories of each other, and we have been contented to consider the statement of insanity in the family as sufficient data on which to base opinions as to the character and degree of heredity. It is not unusual even to-day to see reports in insane hospitals, i. e., insanity

* Read in a Symposium on Mental Diseases at Hotel La Salle, Chicago, April 19, 1912. Read by Miss Florence Orr, field worker, New Jersey State Hospital at Trenton.

in the family without regard to the character or type of the mental disease either in the patients or their ancesters. We must all plead guilty to this previous lack of interest in this matter.

It must be acknowledged that in this country at least the attention of the psychiatrist has been attracted by one outside the medical profession as well as outside the field of psychiatry. I feel that we owe Dr. Davenport a debt of gratitude for the tremendous interest he has aroused on this subject among the psychiatrists. It is needless for me to review his work here, but merely to state that two years ago he began to cooperate with institutions, first in the feeble-minded and epileptics, and soon aroused the sympathy and support of those interested in the insane, and two years after his event in this field finds quite a few hospitals for the insane making use of the field workers trained by him at Cold Spring Harbor engaged in collecting statistics regarding heredity. It is also gratifying to note that New Jersey has taken the lead in this line of work, and the pioneer work of Professor Johnson and Dr. Goddard at Vineland and of Dr. Weeks of the Epileptic Village at Skillman is now a matter of record. We can gratefully bow to their leadership in this field and humbly follow in the way that they have so successfully blazed.

The epileptic institution at Munson, Mass., under the direction of Dr. Flood, must also be mentioned here as among the first to employ field workers to study the question of heredity among the patients. Although Kings Park State Hospital, of New York, was the first to employ field workers in the study of heredity in insanity, we believe that the New Jersey State Hospital at Trenton was the first to organize a permanent department in this field. The number of field workers has increased each year until last summer found over twenty taking the special course and these were later sent to various hospitals and institutions among which were many insane hospitals. The great activity exhibited in this field of research speaks well for our future knowledge of the subject, and before many years, no doubt, we will have a much better conception of the question of heredity in insanity and kindred diseases.

In only one other country, as far as I am aware, can it be said that any original field work or systematic study of heredity has been established, and as one would expect we find this attempt in Germany. As far as I am aware the work is confined entirely to one individual at the present time. Dr. Rudin, Oberarzt of the Psychiatric Clinic at Munich, is the man I refer to. It is all the more surprising that such work has not been carried on in Germany much before this, as Mendel was a German, and usually such opportunity does not slip by the German. However, if it had not been for the English and American investigators Mendelian laws would mean little to us to-day, so in one branch of science at least the Germans must yield the palm in originality to England and America, especially as regards work accomplished in this field. As stated before, aside from Rudin's work the field may be said to be barren. In the application of the Mendelian laws to the heredity in mental diseases his work is so unusual and important that I feel it is worth our while to look at it more in detail. Since 1909 he has been Oberarzt of the Clinic at Munich.

During this period and for some time previous he has been collecting material for complex study of the question. So far one important contribution has come from the pen of Dr. Rudin, although in the amount of data collected I feel sure that he must have much more material than anyone else engaged in this work.[1]

The work of Rudin is more remarkable and noteworthy from the fact that he has done the field work personally and at his own expense. He gives up his position at the clinic so many months each year and goes into the field to collect his data. He employs several clerks and stenographers in his office also at his own expense. I consider his work more systematic and accurate than that of any other investigator in this field. Aside from seeing the individual personally as far as possible, which is a tremendous advantage, he has classified lists of all the inmates of hospitals in Bavaria and can get very good records and histories of all cases from these hospitals when necessary. This access to accurate records is a great advantage, especially in the cases committed years ago.

From the majority of records of the hospitals in this country, even within a few years, it is almost impossible to make any sort of a diagnosis, or even guess from what form of mental disease the patient in question suffered. Without financial encouragement and against difficulties that would appear insurmountable to us, he has achieved wonderful results. His course on entartung given at Munich this fall was extremely instructive and interesting and very important to those who were working in the same field. I had the privilege of hearing his lectures and also had several interesting conferences with him in regard to the work. I had taken over some of our charts, but felt that they were very meager compared with some he was able to show me, and that our work so far was to be considered insignificant in view of the tremendous amount of material at his disposal.

The publication that I have spoken of is extremely important to us all, as it is practically an introduction to the subjects and points of the various problems to be investigated, indicating the line where one's energies can be expended with the possibility of obtaining the best results. In his work of 100 pages he gives none of his findings or produces none of his many charts, and this certainly teaches us an important lesson, and that is to proceed cautiously and have plenty of facts and a great many family pedigrees before coming to a definite conclusion regarding the subject. Not only has he collected valuable data in the field, but he has summarized the best literature on the subject and gives the best digest on the subject that has been published as far as I am aware. I would commend this work to all interested in the subject.

The literature in regard to the question of heredity in various mental diseases is as yet very meager. The work of Professor Johnston and Dr. Goddard of Vineland and Dr. Weeks of Skillman is familiar to you all.

1. His article, "Einige Wege und Ziele der Familienforschung mit Rucksicht auf die Psychiatrie," appears in Vol. vii, Part 5, of the Zeitschrift für Gesamte Neurologie Psychiatrie.

With the exception of the work of Dr. Rosonoff at Kings Park nothing has appeared in the literature regarding insanity.

We are just on the threshold of important developments in the study of this complex problem, and it behooves us to proceed with caution. Accuracy is the one thing we must attain in our work. The problems of the feeble-minded and epileptic are much simpler than are those of the other insane. In the former conditions we are dealing largely with a defective anlage idiocy and external factors play only a subordinate part in producing the abnormalities; on the other hand, in mental diseases the external causative factors play a very important rôle in the etiology of many forms, and these factors must be taken into consideration. So that it is absolutely necessary to consider forms of insanity either by themselves or only consider those which are closely related in the same group together. Each form will probably show peculiar features of heredity, and in some forms we may expect no more heredity that in normal individuals. As example we can cite defective childbirth or puerperal states in women, these conditions often precipitating not only delirious states, but often attacks of manic depressive insanity and even dementia præcox. Other sisters in the same family remaining single are not exposed to this precipitating factor, consequently they may not ever show any mental trouble. Many psychogenic factors present in one member of the family may be entirely absent in the sibs, and consequently latent predisposition to various mental affections may never be brought to light. So each individual type of insanity must be considered primarily alone.

The present rather unstable conditions of our classifications and the lack of definite pathology for many types whereby a clear differentiation can be made will necessarily cause us to proceed cautiously in our conclusions regarding hereditary features of many special groups. The large group of dementia præcox will probably offer more uniform types than will the manic depressive group. In the latter group, in view of recent anatomical findings, are many types which do not rightfully belong there. I might mention cardiac genetic psychoses, central neuritis, some forms of delirious stuporous states, which are often looked on as depression, and as we obtain more knowledge of the anatomico-pathologic changes in the cortex more cases will be taken from this group. So far it has been our inclination to make our cases fit into certain known laws, but if we have not the facts on which to explain the various hereditary conditions according to these known laws we should not assume too much; it would be better to admit our inability to correlate our cases according to the known laws than to force them into these laws without sufficient data. The tendencies to-day of families to have only two or three children at the most will often vitiate our results, or in families where a large part of the children die in infancy we are again being blocked from correlating the cases according to definite laws.

The conclusions reached by Dr. Rosanoff in the study of heredity in insanity in the light of the Mendelian theory are as follows:

The neuropathic constitution is transmitted from generation to generation in the manner of a trait which is, in the Mendelian sense, recessive

to the normal condition. Rules of theoretical expectation are accordingly as follows:

1. Both parents being neuropathic, all children will be neuropathic.

2. One parent being normal, but with the neuropathic taint from one grandparent and the other parent being neuropathic, half the children will be neuropathic and half will be normal, but capable of transmitting the neuropathic make-up to the progeny.

3. One parent being normal and of pure normal ancestry and the other parent being neuropathic, all the children will be normal, but capable of transmitting the neuropathic make-up to their progeny.

4. Both parents being normal, but each with the neuropathic taint from one grandparent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal, but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic.

5. Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the children will be normal, half of them will be capable and half not capable of transmitting the neuropathic make-up to their progeny.

6. Both parents being normal and of pure normal ancestry, all the children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

THE WORK OF THE TRENTON STATE HOSPITAL

It will not be out of place here to describe the methods used at this hospital, where we combine "field work" for the study of heredity with "after care" work.

We have had for a year two trained field workers, supplied through the courtesy of Dr. Charles B. Davenport, to collect data in regard to heredity factors in the family history of patients. We have not limited them to any certain line, but have insisted that all possible information in regard to relatives should be obtained. In one instance one field worker obtained information in regard to 3,300 members of a family group. This family group was located in one of the northern counties of the state and had intermarried to such an extent that only five distinct families were represented. Of this number, seventy-six were insane, twenty-two were patients in the State Hospital at Trenton, fourteen in other hospitals and forty not committed. Following is a list of the various abnormal individuals:

Sexual offenders	50
Epileptics	5
Alcohol	46
Feeble-minded	13
Cancer	19
Sarcoma	1
Blind	2
Congenital defective	1

In practically every case investigated it is possible to obtain some information in not less than 200 members of a family, and sometimes a great many more. The field workers have found no difficulty in obtaining this information, and without exception, they have received courteous treatment from the individuals whom they have visited. We find that the families are much interested in the work and will give all the information possible. The field worker becomes acquainted with the patient and usually talks with the patient before going to the family, and in this way carries messages back and forth and establishes friendly relations. They spend on an average fifteen days a month in the field. The rest of the time is spent at the hospital, writing up histories and making out charts. They do not attempt to make diagnosis, but take down all facts given by the relatives. Wherever the family physicians know anything about the families, these are visited and their opinions also noted. Where relatives have been in the hospital reference is made to this, and a diagnosis made from the records when possible. When relatives have been in other hospitals, either in this state or in any other state, we have endeavored to obtain a copy of the records from these institutions.

The patients in the hospital are catalogued according to communities, towns, cities, etc. When the field worker goes to a certain district she has the names of the discharged patients who are living in that community. A visit is made to these discharged patients, and an endeavor made to learn something as to their condition. Often they find the environment such that it is necessary to report conditions to the hospital, and then advice can be given the family as to the right method to pursue to prevent a recurrence of the attack. This "after-care" work is a very important part of our field work and has resulted in much good to discharged patients. Several times during the year the field workers devote all their time to looking up discharged patients. Besides looking up the heredity in families, they inquire into the habits, domestic relations, occupation and any other factors which are wanted by the physicians. In certain cases where the statements of the family were questioned, the field worker went into the community and they were able to prove or disprove these statements. We have now collected a large number of pedigrees, averaging 200 or more to a family.

It is not my purpose to go into a close analysis of these charts, but these are given merely to show the progress of the work.

In Chart I (H. H.) we have the pedigree of a case of neurasthenia. Generations are given on the left-hand side of the chart. Each individual is numbered according to that generation. A transcript of the notes is given in this case to show the method of the work.

To summarize: We have a patient, a neurasthenic, one of three children, a sister of whom was an epileptic and a brother nervous. The father was a manic depressive case who committed suicide and the mother was neurotic. The father's family is apparently of good stock. The mother's family, however, shows marked defects. The maternal grandfather was a neurasthenic. The maternal grandmother was also

a neurasthenic. One maternal uncle epileptic and another alcoholic. A maternal aunt suffered from manic depressive insanity, but recovered. The epileptic uncle has one epileptic boy. One of the patient's great-great grandmothers on the mother's side was insane at the age of 30, following the death of a child, from which she did not recover. In the maternal grandparents' line there is a good deal of nervousness and neurasthenia.

IV-39 was a patient at this hospital, manic depressive insanity, recovered and married a former patient. His wife had another attack and recently the man committed suicide.

H. H., born in 1891, oldest child of J. G. H. and H. S. H. He has always been extremely nervous since early childhood, had never been like other children and has always been a source of constant worry to his mother. He has always read "deep" books and stayed indoors to read them. Many of these books were quack medical books. He is the oldest of three children. The next child, a girl, H., is nervous, and has suffered from convulsions after eating something which did not agree with her. It is perhaps epilepsy, as a brother of her mother suffers from epilepsy. The youngest child, a boy, is very nervous. There is a strong neuropathic tendency throughout the family, past as well as present generations. There is no insanity in the father's family, though there is a tendency toward sex perversion on the paternal grandmother's side. The patient's father himself committed suicide following two years drinking heavily after business reverses. The mother's family is all neuropathic, very few normal individuals to be found in the entire history. A great many of the people not committed were in a much more dangerous condition than the patient himself. The maternal grandparents and great grandparents were eccentric, a great-great grandmother was insane, a maternal aunt was insane and recovered, a maternal uncle was epileptic, a maternal great aunt and uncle insane, though never committed. A second cousin insane and in this institution, recovered. Many other neurotic.

Chart II (B. B.) is an illustration of the method of charting used by the Eugenics Record Office. There are forty-two individuals on this chart, whereas, Chart I has over seventy. This shows the inheritance through marriage of two feeble-minded individuals. Nine children were born to this family, all of whom are feeble-minded, one alcoholic. Two of these children are inmates of this hospital at present. One girl of this feeble-minded pair married a man who was alcoholic, but his family was normal. As the result of this union are three feeble-minded and two normal. One feeble-minded child is in Vineland. Another girl married a man who was alcoholic, and has one feeble-minded child at Vineland. Four members of this group are now cared for by state institutions. There are, altogether, twenty-two feeble-minded progeny from the original mating.

Chart III (J. K.) is a summary which represents 200 individuals, fifteen of whom are insane, ten were in the Trenton State Hospital, twelve tubercular, three neurotic, one feeble-minded, seventeen died in infancy, nineteen were alcoholic. Of the psychoses, we have six manic depressive, four dementia præcox, one questionable dementia præcox, one senile paranoid condition, one imbecile, one feeble-minded, one unclassified. The paternal line is fairly good, with the exception of alcoholism. The maternal line, on the other hand, is very much affected. The mother is neurotic. One sister was a border-line case. Two sisters were manic

depressive cases. The mother had nine living children, three died in infancy, making a family of twelve. The mother had manic depressive insanity from which she recovered and is now living at the age of 83. The father was alcoholic, had a sister who was in senile paranoid condition and a brother dementia præcox. This brother had two children, both of whom are dementia præcox and inmates of this hospital. He married a woman put down as peculiar. The maternal cousin is a case of dementia præcox in this hospital. As we see here, in the preceding generation the number of children exceed the large number of children of the present generation. In this family, out of five individuals who were insane in the grandparents and great grandparents, only two were in institutions, while all the cases that were insane in the parents' children were committed to institutions, and this fact will be found to run through all our charts. One can conclude that in the preceding generations the percentage of the cases who were insane and were committed to an institution were much smaller than the percentage of the same class to-day. This has an important bearing on the apparent increase in the number of insane institutions at present, for I think it can be definitely shown that a large proportion of those who were insane in the community in previous generations were kept at home.

Chart IV (M. L.) represents a family of 371 members, in which seventy-three were abnormal in the following proportions:

Insane	14
Alcoholic	6
Sexual offenders	11
Syphilis	2
Blind	2
Cancer	5
Epileptic	1
Deaf mutes	2
Congenitals	2
Constitutional defectives	2
Neurotics	10

Diagnoses of the insane are as follows:

Alcoholic insanity	1
Senile psychoses	3
Senile trauma	1
Constitutional defective	1
Arteriosclerotic brain disease	3
Manic depressive insanity	2
Psychasthenia	1

The patient represented by three asterisks was a psychasthenic. She has six brothers and sisters; two brothers twins and neurotic, two sisters neurotic, one sister insane, with diagnosis of hysteria. We find the mother was a constitutional defective. There are two brothers and a sister manic depressive, and the maternal grandparents were both senile psychoses. The father was neurotic, and was a psychopathic sexual individual. He was married three times. He had two sisters, one was senile, and the other arteriosclerotic. One brother suffered from senile psychosis, due to head trauma, at the age of 50. There were thirteen brothers and sisters in this family. Three could be classed with the senile psychoses, and here we find the father of this family died at the age of 60 of senile dementia, while the mother apparently came from normal stock.

This chart illustrates a very important point, that is, hereditary features of senile psychoses. Here the diagnosis is not made merely on old age, because of this family there are thirteen normal individuals living at the ages of 70, 93, 60 and 85, and this tendency to senility seems to be in this family in the proportion of three to twelve, thirteen children dying in infancy. Another significant fact, is the tendency in succeeding generations to develop manic depressive insanity and psychopathic states.

Chart V (P. H.) illustrates the inheritance in a case of dementia præcox. The patient was one of six children, three of whom died in infancy, one neurotic and one normal. The father was a case of manic depressive insanity, recovered, living at the age of 62. He is one of six children. A brother has arteriosclerotic brain disease, a sister neurotic. Paternal grandparents, the grandmother's line, is apparently normal. Paternal grandfather was a constitutional defective and died at the age of 66 of arteriosclerosis. Grandfather has twelve brothers and sisters. One brother is put down as melancholic, one died at the age of 42, had a sunstroke and was insane. One was a constitutional defective, died at the age of 19. There were five affected individuals in this group of thirteen, seven could be put down as normal, one neurotic. The mother of the patient was neurotic. She was one of fifteen children, seven of whom died in infancy, three were normal and one had hare-lip. The maternal grandmother was put down as insane. The maternal grandfather apparently a normal line. We have, then, summing up, a total of 292.

Insane	15
Epileptic	4
Feeble-minded	1
Neurotic	5
Hare-lip	1
Syphilis	2
Sexual offenders	2

Diagnoses of those insane are as follows:

Constitutional defective	2
Melancholy	1
Dementia præcox	1
Psychosis following sunstroke	1
Hysteria	1
Arteriosclerosis	2
Depressed	1
Feeble-minded	2
Unknown	2

CONCLUSIONS

We have not attempted to analyze these charts carefully, but they are given merely to illustrate the progress of the work, and also to illustrate what a difficult task the analysis of these charts means. Frequently, when a point in question is necessary, the field worker visits the family again to clear up these disputed points.

In this paper no attempt has been made to give any definite conclusions regarding hereditary factors in the various psychoses. We have reviewed some of the most important work done so far and outlined the methods to be pursued to obtain the best results in future work.

We have also spoken of some of the difficulties to be met with, especially when analyzing the material when it comes from the field workers. It is again well to emphasize the necessity of maintaining an open mind regarding these problems and not to be too biased in attempting to make the facts fit the Mendelian laws. At the same time we recognize that a comprehensive knowledge of the laws will assist us materially in analyzing our data and in arriving at practical conclusions. We also feel that much valuable material will be obtained which will aid us in solving the problems of prophylaxis and prevention of mental diseases. We hope that other hospitals and institutions will adopt this method of studying these important questions.

ADENOID VEGETATIONS OF THE NASOPHARYNX*

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Historical.—Wilhelm Meyer, of Copenhagen, in 1870, was the first to direct the attention of the medical profession to the part played by hypertrophied adenoid tissue in the development of nasopharyngeal stenosis, and furthermore, that deafness frequently resulted from the retardation of air through the Eustachian tubes, due to this condition. His conclusions were based on more than one hundred cases of his own personal investigations. These observations were at once recognized by Dr. Guye, of Amsterdam, and Dr. Lowenburg, of Paris. Numerous writers in both Europe and America have written extensively on this subject since Dr. Meyer first discussed postpharyngeal adenoids, but, comparatively speaking, little has been added to what has already been given us.

Since adenoid growths in the nasopharynx demand surgical interference in their treatment, it may be well to call attention, briefly, to the anatomic features and the relations to the parts concerned.

Anatomic Features.—Adenoid vegetations are found in the nasopharynx or the respiratory divisions of the pharynx, commonly called the postnasal space. This portion lies behind the nasal cavities and above the level of the soft palate. It is irregularly cubical in shape, and its six irregular sides and surfaces may be described as consisting of a roof, floor, an anterior and a posterior wall and two lateral walls. The roof is located immediately below the base of the skull, beneath the body of the sphenoid bone. The floor exists by virtue of the contraction of the muscles of the parts, in connection with the soft palate, by which the nasopharynx is separated from the oropharynx. The anterior wall is

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limited by the posterior nares. The posterior wall slopes downward from the roof, presenting a curved surface rather than a well-defined angle. The two lateral walls stand in relation with the petrous portions of the temporal bones and the internal pterygoid plates of the sphenoid bone.

Adenoid tissue is one of the normal constituents of the nasopharyngeal mucous membrane. Immediately opposite the posterior nares, on a level with the inferior meatus and on each side of the pharynx are the orifices of the Eustachian tubes; between these openings there is a conspicuous aggregation of lymphoid tissue which constitutes the pharyngeal tonsil, or Luschka's tonsil. Throughout the mucous membrane of the postnasal space a considerable quantity of adenoid tissue is to be found, arranged as numerous lymph follicles. When this glandular tissue becomes hypertrophied, we speak of it as adenoid vegetations. Children are prone to this condition, and not infrequently they are found to exist in infants at birth. There is no doubt but that heredity plays an important rôle in some cases. In order to understand the pernicious effects of adenoid growths in children the disturbed physiologic functions should be considered.

Effects on the Respiration.—A comparison of the normal nasal respiration with the abnormal oral respiration due to adenoid vegetations, although familiar to all, will serve to illustrate the evil effects by contrast. In normal respiration performed through the nose, the soft palate and root of the tongue are in contact; thus separating the mouth from the pharynx. The current of inspired air ascends toward the roof of the nasal fossa, then changing its course descends in a curve in the direction of the superior and middle turbinals, describing almost a semi-circle in its course through the nose, reaching the upper portion of the posterior wall of the nasopharynx. The inferior turbinal lies wholly below the stream or current of in-coming air, except, perhaps, its posterior extremity. In expiration the air travels the same route, only in the reverse direction.

If there is an obstruction in the nasopharynx occasioned by adenoids and the respiration is embarrassed to any considerable extent, the mouth must be used for breathing. It is important in this connection to remember that the nose and not the mouth is the organ of respiration and constitutes the upper part of the respiratory tract. Habitual mouth breathing is a pathologic condition, the result of disease or disturbed function in some portion of the respiratory system. When respiration, of necessity, must be performed through the mouth because of adenoids in the vault of the nasopharynx the abnormal conditions become plainly evident. The root of the tongue is depressed; the soft palate is somewhat elevated; and in deep inspiration the tongue becomes flattened and lies close to the floor of the mouth, while the soft palate ascends to the level of the hard palate. Again the three important functions of respiration that should be performed by the nose, namely, the purification of the air, its moisture and the modification of the temperature of the inspired air are entirely prevented in oral respiration.

Developmental Changes due to Mouth-Breathing.—Children when quite young may acquire the habit of breathing through the mouth, because of vegetative growths in the nasopharynx, which leads to a lack of development of the mouth and jaws. The maxillary bones do not develop properly; this condition does not affect the first dentition so much, but along with the appearance of the permanent teeth they are crowded for room, due to the arrest of the development of the upper jaw. The teeth are irregular and do not attain their normal relations one to another, and if permitted to remain so, fail to furnish the proper stimulation necessary to the normal development of the bones in which they are located. Likewise the osseous structure of the deeper passage of the nose fails to develop, giving the child the appearance of flat-face.

Mouth-breathing in children produces not only deformity of the mouth and jaws, but when the obstruction is located in the postnasal space, it produces in well-marked cases a facial deformity that is characteristic: the lower jaw is dropped, the upper lip is often short, the eyebrows are frequently elevated, the inner canthi of the eyes are drawn down, the face appears elongated, the teeth are exposed, the nose is narrow and the expression is vacant, listless and stupid.

Other changes that are not so easily noticed in the facial appearance are at once discernible on the examination of the interior structures of the organs. There is a high arched palate; there is also lateral compression of the alveolar arch and elongation anteroposteriorly. If the disease persists until after the second dentition, the alveolar arch becomes higher and the top more pointed. The incisors of the upper deformed jaw project far beyond the corresponding teeth of the lower jaw.

Dr. Eustace Smith believes that in very young children symmetrical retraction of the inframammary regions and depression of the ensiform cartilages with prominence of the upper part of the sternum has been especially noted in nasal obstructions due to adenoids.

The facial aspect is at once recognizable. The mouth is half open, the alæ-nasi compressed, the buccal folds lost and the child usually has a stupid appearance. The child's rest is disturbed at night. It sleeps with its mouth open, it wakes up with a dry mouth and tongue, due to oral respiration. The nasal respiration is very defective, in some cases altogether absent; the nasal resonance is almost entirely lost and the child quickly gets out of breath on the least exertion. The child cannot eat properly, for it is compelled to breathe through its mouth at the same time it masticates its food.

Influence on Deglutition.—As has already been observed in normal respiration, the mouth and pharynx are separated by the soft palate coming in contact with the root of the tongue, so in the act of deglutition performed in a natural manner the nasopharynx is separated from the oropharynx. In the accomplishment of this function, the soft palate is likewise called on to perform an important part.

It is in the second period of deglutition that the nasopharynx, Eustachian tubes, and posterior nares must receive protection from food or drink finding entrance into their cavities. As soon as the liquids or

solids pass the isthmus of the fauces, the soft palate is raised and stretched horizontally across the pharynx, the superior face of the soft palate is in apposition or contact with the posterior wall of the pharynx. At the same time the palatopharyngeal muscles contract, in which the curved edges of the posterior pillars of the soft palate are made straight and tend to meet in the median line, the small gap being completely closed by the uvula. In this way the nasal pharynx is separated from the lower portions of the pharynx and the postnasal space and the posterior openings of the nasal fossa are thoroughly protected.

Now if the abnormal development of lymphoid tissue in the vault and posterior portion of the nasopharynx, and particularly on the site of the pharyngeal or Luschka's tonsil forms a considerable mass, it is evident that it must interfere with the harmonious action of the parts concerned in deglutition. The action of the soft palate is interfered with by being pushed downward, or rather hindered in its elevation in the performance of its normal function. These overgrowths act not only as an obstruction to respiration, but render deglutition abnormal to a greater or less extent by mechanically interfering with organs otherwise normal.

Aural Complications.—The ear symptoms induced by adenoid vegetations in the vault of the pharynx, are, in many instances, of grave importance. The pathologic conditions begin with the closure or obstruction of the Eustachian tube. If the hypertrophied lymphoid tissue is of sufficient size it presses on the tubes, or there is overlapping of their orifices, thus preventing the normal action of the tubal muscles; with the result of improper ventilation of the tympanic cavity. This is due directly to obstruction of the orifices of the Eustachian tubes. Inflammatory conditions may also arise in the nasopharynx and by continuity of tissue extend to the tympanum through the Eustachian tubes.

Disturbance of the aural function, due to vegetative growths in the postnasal space, arises from the disturbance which is occasioned by direct interference of the movements of the palate muscles. Three of the palate muscles form an attachment with the Eustachian tubes, levator palati, tensor palati and palato-pharyngeus (salpingo-pharyngeus).

If, as we have seen, the soft palate is prevented from performing its normal functions, in deglutition, or from a condition of habitual mouth-breathing, the effect must be shared by the Eustachian tubes. More particularly because of the disturbed action of the tensor palati muscle, which renders the soft palate tense and opens the Eustachian tube during deglutition.

Again if an adenoid mass is formed in the nasopharynx causing complete nasal stenosis, at each act of deglutition the air is exhausted from the tympanic cavity and the membrane is thus drawn in. The evil effects from adenoids on hearing is to be found chiefly in young children with hypertrophic rhinitis and enlarged faucial tonsils.

It is the opinion of the author of this paper that there is a strong bond of sympathy existing between Luschka's tonsil and the faucial tonsils. The structure of each is very similar, and no doubt they each

serve as protective zones against the invasion of harmful agents in the early years of life, but we find the tendency in both to atrophy at adolescence under normal conditions. At this period, the lingual tonsil seems to develop and no doubt performs to some extent the functions of both the pharyngeal and the oral tonsil, since it comes into contact with the inspired air and the food and drink as they pass over their surface.

So far we have been chiefly concerned with the manner in which adenoid vegetations disturb normal functions, rather than entering into the discussion of the histology and pathology of the disease. Since these are so well understood and the symptomatology and diagnosis present no difficulties, our greatest interest will be no doubt, in the treatment.

Treatment of Adenoids.—The only treatment for adenoids is operative procedure. Internal remedies appear to have no direct influence in their disappearance. Methods by chemical caustics and electric cautery are likewise unavailing. Local applications are not curative in their effects, and the only rational treatment that is of real service is in their removal by surgical interference.

Preparation of the Patient.—The same antiseptic precautions should be observed as in other surgical operations of the nose and throat. The mouth should be cleansed by an antiseptic lotion, the pharynx thoroughly irrigated and the nose sprayed or irrigated with an antiseptic douche.

The patient should then be placed on the operating table and the anesthetic administered. We have in choice of anesthetics, nitrous oxid, chloroform, ether and cocain. The author usually advises a general anesthetic and prefers chloroform.

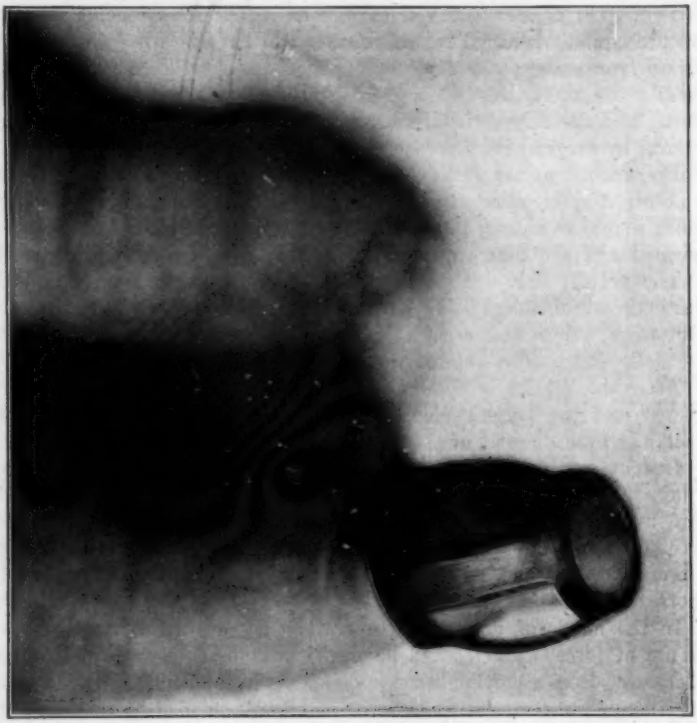
After the patient is anesthetized, the head of the operating table is lowered and the patient placed in Roser's position, that is, the head dependent over the end of the table.

Instrumentation.—In regard to the instruments, quite a number are in use. Perhaps Gottstein's curette with its various modifications is the more universally used. Various kinds of forceps have also been used successfully in the removal of adenoid growths. The finger-nail operation is preferred by some surgeons. An artificial metallic nail is used by others.

In the hands of unpracticed operators, there are two dangers from the use of forceps that should be mentioned: first, the soft palate may be lacerated from a portion becoming engaged in the blades of the forceps; and second, the posterior end of the nasal septum may be seized by the forceps and the posterior end of the vomer torn. In the use of the curette, precautionary measures should be adopted to prevent the patient from inspiring adenoid tissue and blood during the operation. Aside from this danger, which might set up septic inflammation in the bronchi, septic pneumonia or gangrene of the lungs, accidents from hemorrhage and from sepsis in the field of operation are to be carefully guarded against.

In the finger-nail operation, or the use of gauze to break down the redundant growths, the danger lies in not being able to free the nasopharynx from the entire mass.

It has been the author's practice for several years to use a finger curette of his own design, that has proven serviceable. The curette is placed on the index finger, with its cutting blades above, and when it is introduced into the postnasal space, the blades of the instrument come into direct contact with the adenoid tissue to be removed. There is freedom in its use from the dangers of injuring the soft palate and the posterior end of the nasal septum, which may occur in the use of forceps or curettes with long handles. Having ascertained the condition of the nasopharynx by a digital examination previous to the operation, the operator with the finger and the finger-curette in place, when introduced



Author's finger-curet.

into the postnasal space, has some advantage in feeling his way as he removes the growths and is thus enabled to some extent by tactile sensation to make the proper amount of pressure when and where it is needed in excising them.

Operative Procedure. — With the patient anesthetized and in the recumbent position as above described, the mouth is opened and a Denhart gag is inserted. The finger-curette is placed in position on the index finger, which is introduced into the postnasal space. A few

sweeping lateral strokes across the posterior wall of the nasopharynx, and also from above downward, thoroughly removes the entire adenoid mass. In case any shreds or remnants remain they may be removed by forceps or with a piece of sterile gauze.

After-Treatment; Latent Infection. — Ordinarily, local applications are unnecessary, but should they be required a spray of an alkaline antiseptic solution may be used.

Sepsis following an operation for the removal of adenoids is of rare occurrence; if care is taken with the sterilization of the instruments, the operation field and the hands of the operator, the drainage is almost perfect, yet slight infection follows in some cases. The most serious are cases in which infection invades the Eustachian tubes. Tonsillitis occurring a few days after an operation on adenoids may be looked on as probably due to sepsis. If the end of the bony septum has been broken, sepsis may follow, but in all such cases the infection is usually mild and subsides in a few days without serious consequences.

Danger of Infection from Without.—It is well for the patient to remain in bed from twenty-four to forty-eight hours after an operation for adenoids. There is always some danger of infection from vitiated air or contaminated atmospheres. School children should not be allowed to return to school for a few days following the operation. At the end of a fortnight the nasopharyngeal space should be carefully reexamined in order to ascertain the condition and to determine whether or not the normal nasal respiration has been established.

DISCUSSION

Dr. W. L. Ballenger: Dr. Smith has given us a very admirable review of the facts connected with adenoids, for which he need not have apologized, I am sure.

I have never tried Dr. Smith's treatment; it does not appear to me with this thimble it would be possible to make a complete removal, although I cannot say. It seems to require a sharper instrument. I have had no experience with that hence cannot express an opinion, but will say that it does not appeal to me as a radical operation.

To get results in adenoid surgery, I think it is essential that we remove all of the adenoid tissue, otherwise we will have recurrences in 20 per cent. of the cases, whereas when making a radical removal of the tissue we will not have any recurrences. I have followed various technics as the years go by, but have abandoned forceps because I had a death following their use a few years ago, and I have never attempted to use forceps since that time. This death was entirely preventable. The doctor had gone to a neighboring city and I left thirty minutes after, and the child was supposed to be asleep, and we found out some hours later that the child was swallowing blood and had been doing so for some hours and it was too late to save the patient. It was a concealed hemorrhage. Had we known she was bleeding we could have tamponed the nose. Anyway it made me realize the dangers of the forceps operation.

The method I pursue in general anesthesia is to first use the LaForce adenotome. But that does not remove all of the tissue; I do not believe you can do a complete operation with the LaForce instrument alone. The LaForce instrument removes the central portion of the adenoid tissue, but does not remove that portion just behind the nasal septum. It leaves a little strip laterally, but removes most of the adenoids except that. If you use a considerable amount of pressure it gets out most of the adenoid tissue, a very nice specimen to show the family and demonstrate what has been done. After using the LaForce instrument I

then follow with Dr. Stillman's modified curet, and remove this little mass lying laterally behind this septum, then I insert my finger with a piece of gauze over it, and in that way I think you can always safely say you have done a complete operation. I used to see many more recurrences than I have in recent years since following this method.

Now as to the age in which adenoids present; this is a point not touched upon by the writer, excepting to state that children are prone to it. Some investigations have been made on this point which showed there was an appreciable tendency for adenoids and tonsils to grow less at the age of puberty, but continue to adult life without shrinking, and that accounts for the improved nasal breathing which comes after adolescence, due to the fact that the pharynx becomes larger and larger and the adenoid tissue becomes less and less obstructive, formerly thought due to shrinkage, but later thought due to the enlargement of the space in which the adenoids grow. A great trouble that arises from adenoids is not so much from obstruction as from the inflammation that arises, and I think most of the ear troubles that we find are the result of adenoids surrounded by an inflammatory region rather than obstruction, although there is a simple mechanical obstruction as Dr. Smith told us; and I simply want to emphasize that I think this mouth breathing in itself is not so bad, but it leads to other conditions of an inflammatory type; the infectious process starts in the tonsils and spreads to the ears and nose and the other parts of the body. There is where we get our very serious complications. In this connection I wish to relate that in the last two months I have had ten mastoids following acute tonsillitis and no doubt adenitis as well, and each one was an intracranial complication without exception. I had a sinus thrombosis, a circumscribed meningeal abscess, a diffuse retromeningitis, and it is the most destructive series of cases I have ever met with in all my life.

Dr. Richard J. Tivnen, Chicago: Dr. Smith made an apology for presenting this sort of a paper to a special section. I am sure he need not have made such apology. The paper was well done and very practical, and I am sure we all enjoyed it.

The point Dr. Ballenger brought out, in which he reported a case of death from concealed post-operative hemorrhage, emphasizes the point I wish to make, namely: I think all of these cases, so far as it is possible, should be hospital cases, and I believe they ought to have a special nurse to care for them, who has had training in that particular line of work.

Dr. Ballenger: The case did not have a special nurse, but was in a hospital where the nurses are sisters.

Dr. Tivnen (resuming): We all know the average general hospital as a rule does not provide more than a scant course of training in our special work to their nurses. Those of you who have had much to do with general hospitals know that to be true.

In this connection it seems to me it would be well if the staff men connected with these hospitals should insist that they be permitted to deliver to the nurses an adequate course of lectures dealing with the nursing of our particular class of cases. From the standpoint of our patients' welfare I think we are entirely too modest in this respect. I had this same idea in mind when I spoke of the fact in discussing Dr. Beck's paper—that we are entirely too willing to merge our work with the general surgeon. Naturally the surgeons and to a large extent the hospitals also are more particularly interested in laparotomies, more particularly interested in major surgery, so to speak, and our field receives very little attention. It would be well if every staff man insist that the hospital should direct more attention to our special work and that the nurses be given special instruction regarding the after-care of our operative cases.

I have devised a little instrument, a simple forceps with the ends at right angles; the sponge fitting into the tip. It is inserted into the nasopharynx after adenoid operations. It diminishes the tendency to postoperative hemorrhage and lessens the amount of blood lost at the time of the operation.

As to the instrument the doctor uses for curetting, I follow the same technic identically that Dr. Ballenger has described, and I am very partial to the LaForce instrument. I think it is just the thing and it is not so apt to injure the Eustachian eminence. I think this is one of the dangers we should be on our guard against. It is possible, if you go too much laterally, as you may in the movement of a child, etc., more particularly with the curet, you may injure the eminence.

I believe we should all wear rubber gloves particularly if we are curetting the nasopharynx. I do not remember any case where a surgeon has been infected, but it is along the line of clean surgery to wear rubber gloves, particularly if curetting the nasopharynx with the finger, or with gauze as Dr. Smith has described or with his little instrument.

Under the head of anesthetics I rather differ with Dr. Smith. I never use chloroform. I am afraid of it. I prefer ether as a general anesthetic or perhaps nitrous oxid.

As a means of diagnosis of adenoids once in a while I find Hayes' pharyngoscope very useful.

I believe we should exercise the utmost caution in selecting adenoid cases and the time for the operation, exercising also a great deal of care as to the condition of the tonsils themselves and the surrounding tissues, and preparation of the nose some days prior to the operation. The time has passed when we can consider or let the people consider that an adenoid operation is a simple matter. We hear altogether too much of the so-called trivial side and this popular impression we should earnestly combat.

Dr. H. W. Woodruff, Joliet, Illinois: I would like to call your attention to two cases of hemorrhage following adenoid operation which occurred in my experience. One was a young lady, 21 years of age, on whom I operated in my office for adenoids, and following the operation there was an immense amount of hemorrhage, but I succeeded in checking it. She lived in the country, so I took precautions to have her remain over night in the hospital, and there was no further hemorrhage at all and she went home. She lived twelve miles in the country, and about two days after the operation the family doctor was called to see her on account of a late hemorrhage, and he became sufficiently alarmed to telephone me, saying he was sending the patient to me but when she arrived there was no bleeding; however, I put her in the hospital again. There appeared to be no hemorrhage whatever, but during the night another hemorrhage occurred and it was necessary for me to spend a good part of the night with the case. In fact it was very alarming for a time, but that was the last of the hemorrhage. It might of course have been a fatal result if that patient had not returned to the hospital.

The other case was that of a child. The operation was performed in the house. The family physician was present. The child had been sick and the operation was delayed for a time until the doctor thought everything was all right, and so we went ahead with it. This operation was attended with no unusual hemorrhage, apparently, and the little child was put to bed. The next day I was asked to come up to see the child as it had vomited considerable blood. I examined her throat and did not see any blood. I suppose we have all had this experience, not knowing how much hemorrhage might be occurring after the adenoid operation, when in reality there might be a good deal of blood swallowed by the child when it was asleep. The cause of the hemorrhage was the liver. The child was jaundiced. So I have since been very careful to note whether the child is in perfect health before attempting this operation.

Dr. Louis Ostrom, Rock Island: After the child is brought from the operating table I never leave it until I know the bleeding has stopped, and I explain as to the number of times they swallow. I have had an experience along that line. The child is sleeping and goes along two or three minutes or more without swallowing at all. If the child begins to swallow six or eight or ten times a minute, there is something going to happen. Invariably it means a postoperative

hemorrhage. By telling the mother particularly to watch the patient as to the frequency of swallowing, and if the patient swallows six or eight or ten times a minute I know it is not saliva.

In regard to the anesthetic, I want to say that I have had three deaths under chloroform. It was not my choice of anesthetic, but the choice of the family physician who insisted on the use of chloroform and the patients died, and I think it is one of the most dangerous things we can use.

The question of swallowing immediately after an operation is to my mind one of the most important indications. I always leave instructions to watch the child and if the mother is not the kind to notice things I insist that there be a nurse or some person who will do this. I insist on observing the question of swallowing for the first twenty-four hours. If they swallow frequently, invariably you have hemorrhage.

Regarding the use of the LaForce instrument—Dr. Ballenger described it well and I could not have done better myself—I remove the adenoids with this instrument. I keep the instrument in probably a few minutes, pressing it against the space that was just operated on. By doing that I have been able to minimize the amount of hemorrhage by pressure with the LaForce instrument at the time.

Another word in regard to swallowing. It is not a question of noticing it; any one can notice it, but if they swallow more than six times a minute, and if bleeding at all they will give a little gurgle and swallow; then they are having a hemorrhage. I had probably twelve or thirteen cases like that in the past year and the question of hematemesis has made me look into the question personally. I hope Dr. Beck will show his instrument that has proven to be one of the most useful ones, for I can leave it with the nurse, and no nurse has ever had any trouble in putting that instrument in. It is the easiest instrument to use I have ever seen.

Dr. C. A. E. Lesage, Dixon: I protest against the use of chloroform in this operation, not only for the immediate dangers present, but for the remote dangers. It has been shown by some Eastern investigator—I think the work was done in the Johns Hopkins Hospital—that the use of chloroform is dangerous, causing fatty degeneration of the liver and changes affecting the kidneys.

As physicians and men practicing in the country, we have occasion to see in what almost disregard the adenoid operation is held by the average practicing physician. It is considered an operation of practically no moment. Every doctor practically does it and does it fearlessly. Yet notwithstanding it should only be a hospital operation and treated as such.

Dr. C. B. Welton, Peoria: In regard to the anesthetic in adenoid cases, I never use chloroform. In our town in three months we have had three deaths from the anesthetic; two of the deaths occurred in the practice of a general surgeon. In one of those two cases gas anesthesia was used, and in the other ether anesthesia was used. The other was in the practice of an ear, nose and throat man of our city and was under ether anesthesia. In these cases, in spite of the deaths with the gas anesthesia, I firmly believe gas is the anesthetic for these short operations. In the death that occurred in the general surgeon's practice it was not a short operation, it was a laparotomy, and so was the death that occurred with the ether. But in spite of that death, if gas anesthesia is used for short operation, I believe it to be by far the best. The case has not been reported that was due to the operation by the ear, nose and throat man.

Dr. Joseph Beck, Chicago: There were several points I wish to discuss. First is the subject of anesthesia. I believe this is all out of place or unnecessary as to the subject of chloroform. Two or three years ago at the American Medical Association there was a commission appointed—most of you are familiar with the report—and the use of chloroform was very much objected to and therefore should not be used; ether was advised as the safest method of anesthesia. Recently I brought an apparatus from New Orleans where I saw it demonstrated at that time in tonsil and adenoid operation, which is excellent for administering an anesthetic. It is the warm vapor of ether forced by means of a foot bellows.

A subject the doctor did not touch upon although so well known and to me most important, is the point of the pathology in regard to tonsils and adenoids. The whole subject whether there is bleeding, infection and recurrence, etc. depends a great deal on the pathologic condition. Unfortunately you are unable to remove a piece before operation and see what you have. I have removed adenoids and examined histologically and I have found in them eleven different types of pathologic conditions, including malignancy and tuberculosis.

In regard to this instrument, that the essayist shows us, it appears to me it would be practically impossible to engage a big mass in that little space and scrape and scrape, when you might do it with one single sweep of the curet. The Beckman curet or the one modified is the instrument I have used, and it is the best means of removing the adenoids. I have used the LaForce instrument twice. The first time four and a half years ago and I had a severe hemorrhage following it which required post-nasal packing. Four and a half years later I again used it two or three times with success, then I had two children of the same family at one time and both of these children required post-nasal packing. Why this should occur I am not able to say. I have some idea it is the pressure of the instrument against the septum in trying to get that last piece, that caused the hemorrhage. Therefore, my conclusion as to instruments is in preference of the adenoid curet. I am using the sponge on the artery forceps held there after the operation to control the bleeding. If I used the LaForce instrument I think it would be excellent to hold it there and to control pressure as suggested by Dr. Ostrum. I am at the present developing a method of controlling immediately the bleeding from the removal of the adenoid and will publish it in the near future. The less blood there is lost the more perfect and rapid is the recovery.

Dr. Frank W. Brodrick, Sterling, Illinois: I would simply touch on the question of anesthesia, that is, chloroform anesthesia. I was so much surprised to hear that mentioned in an eye, ear, nose and throat section. Children and infants as we all know have been shown to stand chloroform anesthesia worst of all. In reference to ether, chloroform and nitrous oxid anesthesia, I was particularly interested to hear Dr. Welton regarding nitrous oxid anesthesia. I have had six hundred cases of nitrous oxid and gas anesthesia, and they have ranged from an anesthesia for two or three minutes to two hours. I have had all kinds of cases of the head, brain abscesses, mastoid cases, and in none of these cases have we had any difficulty in maintaining anesthesia as long as necessary. In none have we found any ill effects following nitrous oxid and oxygen. I have a man who makes a specialty of gas anesthesia. We use the nasal inhaler entirely, very similar to that followed by Dr. Teter of Cleveland. It is placed over the nose of the child; there is no fright, and no cries. It is asleep before it realizes it. There is no difficulty in maintaining the anesthesia for any length of time. Often in those cases where the fold of the pharynx is occluded by adenoid tissue it is very easy to maintain anesthesia under pressure. Rebreathing is not to be advised in cases of adenoids in children. We find continuous anesthesia through the nose with nitrous oxid and oxygen to be very satisfactory.

The doctor spoke of the use of pressure with the adenotome. I can hardly understand how he gets relief from the hemorrhage in case he had any further operative work in the field.

In regard to hemorrhage, I have been following one little point and have found it very satisfactory. Maintaining our anesthesia after tonsil and adenoid operations, following the operation we use just an ordinary syringe with cold water, syringing the mouth. I might say in regard to the position of the patient that my anesthetist sits at the head of the operating table; the patient is drawn forward, the head placed on the knee and turned to the left side, and the left tonsil is removed first. In that way you have no difficulty in controlling hemorrhage. Following the operation we inject cold water and it is surprising how a few syringefuls of cold water will stop hemorrhage.

Another point I wish to speak of which I think was mentioned by one of the gentlemen, and that is the examination of adenoids. I myself do not believe in digital examination alone. I have had just recently one case of tuberculosis in

the folds of the pharynx, in the adenoid tissue, and two cases of tuberculous ulcers of the tonsils. These two cases are under my care at the present time. As to the question of diagnosis, I had both examined by a laboratory in Chicago, and I think it is very wrong to trust entirely to a digital examination of the folds of the pharynx. It is very easy to gain the child's confidence and examine it thoroughly.

Another thing I have followed in all of my cases and that is the making of a smear from either the tonsils or adenoids. Prior to every tonsil or adenoid operation a smear is made. If there is any question as to the diagnosis a culture is made.

Dr. W. L. Ballenger, Chicago: I want to say a word regarding the so-called recurrence of adenoid tissue. I think nowadays, when there is no nasal stenosis, particularly in young children who have attacks of earache, that we frequently operate before the various portions of the adenoid tissues have become hypertrophied. A year or so later those areas which have not been removed—and I do not believe it is correct to scrape out the pharyngeal mucosa—those cases will go along to the same condition which produced adenoids and become hypertrophied. Those cases we do not see very often. They blame the original operator and consult some one else. I had that experience in my own child. I operated on her when she was sixteen months of age and found very few adenoids in the fold; I operated because of two or three attacks of earache.

Another point Dr. Tivnen brought out that may be of interest to the section: At St. Luke's Hospital we have been experimenting for years training nurses for our special work. They are originally general hospital nurses. Finally we get for our department a nurse who devotes her whole time to our special cases for three months; that was an improvement over the original condition, but still it was not satisfactory. For the past two years we have had a graduate nurse, and she is paid a salary and devotes her attention entirely to our section and we find it a great source of satisfaction. She accepts all the responsibility. In addition we have two interns on the service. We cooperate with these three people and feel very safe about leaving our postoperative cases in their hands.

Dr. G. W. Boot, Evanston: It is well not to treat the field of operation before doing an adenoid operation. If the field is not infected it does not need preliminary treatment. If it is infected no amount of treatment just prior to operation can render it free from infection but by meddlesome treatment infection can be carried into the tuba auditiva and a middle ear suppuration result.

Adenoids cause middle ear troubles not only by a mechanical action in the nasopharynx but also by a mechanical action in the tuba auditiva. It is well known that there is a considerable amount of lymphoid tissue in the mucous lining of the tuba. Any process which causes enlargement and infection of the pharyngeal tonsil will naturally cause enlargement and infection of this lymphoid tissue in the tuba.

As regards anesthesia, I believe that many of us give too much anesthetic to our tonsil and adenoid cases. I prefer to have my patients barely under the anesthetic, so lightly in fact, that they are waking up as soon as the operation is finished. I prefer ether on account of its safety and rarely use as much as quarter pound can for a tonsil and adenoid operation in a child, and I have several times operated on four successive tonsil and adenoid cases with but a half pound of ether.

Dr. G. Henry Mundt, Chicago: One of the first things that interested me in Dr. Smith's paper was what he said of the history of adenoids. He said Meyer was the first man to recognize adenoids. As a matter of fact Charles Dickens observed adenoids long before Meyer did. I remember very distinctly reading that Dickens said where children are employed in certain classes of work in closed rooms, breathing with their mouths open, that it gives them an enlargement of the palate, but he does not give the pathology.

Another thing was the developmental defects. Dr. Smith spoke of the developmental defects of oral breathing. Two or three months ago I showed several cases in our local branch society meeting of the developmental defects of restricted

nasal breathing, and the reason I took these patients there was to demonstrate the narrow nose. I think the narrow nose is decidedly an important thing. When the palate becomes high arched the external walls of the nose are drawn in, and I do not know of any way you can correct this other than have an orthodontist do it. Often I have had adenoid cases on which I operated and did not get a good result, not good nasal breathing. I have put the patient in the hands of an orthodontist and he has corrected the defect of the teeth and they get good nasal breathing. I think that possibly very frequently we should put our patients in the hands of a man to look after their teeth, because if there is not normal occlusion it is impossible to close the mouth and if they cannot close the mouth normally they cannot have free nasal respiration.

In regard to the point of placing the patient on the left side and not operating on the back, I think the left side is an admirably good position to operate on a patient. I generally place a sand bag under the neck, and I have the patient maintained in that position for some hours after the operation when put to bed.

Another thing of importance. I have observed in my part of Chicago within a period of a few months two deaths in doctors' offices who were doing tonsil and adenoid operations. I think the idea of doing a tonsil or adenoid operation in the office, particularly under a general anesthetic, is to be deprecated; taking the patient practically off the street and giving him a general anesthetic is bad. I think patients should be observed previous to operation for some hours. In my tonsil and adenoid work I try to get the patient in the hospital in the evening and operate in the morning. They take the anesthetic better and get along better.

Dr. Smith (closing the discussion): Mr. Chairman: I want to thank the gentlemen for discussing this paper so liberally, and particularly Dr. Ballenger, who has been kind enough to introduce the discussion because of Dr. Adams' absence.

I want to take a moment's time to say just a word about chloroform anesthesia. It would seem that I have been very fortunate in this. If you have a child to operate on, 6, 8, 10 or 12 years old, unless there is a contraindication it seems to me to be quite the thing to start with chloroform and then follow with ether, Squibb's ether. That is my invariable practice. I like to put the child down and get rid of the first fright with chloroform and then follow with ether. That has been the principal way in which we have given anesthetics.

Now about the preparation. If I had a little more time I would like to speak fully on this subject. It has been mentioned that these cases should be regarded as hospital cases and I think so too. I think a tonsillectomy, or the removal of adenoids, or a turbinectomy ought to be dignified sufficiently as a surgical procedure to send the patient to the hospital the evening before, and let the patient be thoroughly prepared for a general anesthetic in the morning if we use that method. A urinalysis should be made, there should be an examination of the heart, an examination of the condition of the lungs, etc., a laxative should be given the evening before and everything of that character taken into account. I think that is one of the things that ought to be emphasized.

I am very glad the doctor has spoken about hemorrhage in watching the swallowing. When a child is removed from the table, a nurse that has had some experience with these cases is entrusted with the care of the child, and she is told to watch for hemorrhage when the child swallows frequently and watch the condition of the ears and lips and all those things. They are little things in a way, but well worthy of care.

In cleaning out the post-nasal space thoroughly, as I said in my paper, if there are shreds and tags remaining the forceps should be used.

One doctor spoke of operating on a child sixteen months old. I have had no experience in operating on children of that age.

Pathology was also mentioned. I would say that our text-books usually give us something of the existing pathology, and still the pathology will differ, and these are matters for individual examination.

I wish to thank the members for their kind discussion, and also wish to thank the chairman.

THE RATIONALE OF SINUS DISEASE AND ITS TREATMENT *

WILLIAM LINCOLN BALLENGER, M.D.
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I have chosen this subject because I believe it is fundamental with reference to sinus disease.

First a word about inflammation. Inflammation as described by modern pathologists, more particularly Adami of Montreal, is a threefold process, namely, increased hyperemia, increased leukocytosis and increased nutrition. That's all. The end-result of inadequate inflammation is a very different thing. The inflammation itself is simply an increased hyperemia, increased leukocytosis and increased nutrition of the tissues. The purpose of inflammation is to overcome infection of the tissue.

If infection is present, it is the object of the inflammation to increase the nutrition of the parts — increase the nutrition of the cells of the inflamed area—and to destroy the pathogenic microorganisms. Then also where we have excessive growth of infective microorganism or trauma, we have an increase in the number of leukocytes throughout the locality. Inflammation (the response to infection) is a very simple process. We are in the habit of thinking of inflammation as an end-result rather than as a physiologic process excited by stress. Inflammation itself is a simple process, a physiologic process, and not a disease process; on the contrary, it is benign. When the reactions of inflammation are inadequate the effect is destructive.

We now come to the causes of infection. We divide the causes into predisposing and active. The active cause is some pathogenic microorganism which does not cause inflammation under ordinary conditions of health. What are the predisposing causes of infection and inflammation? Anything that lowers the vitality of the tissues. What are the things that lower the vitality of the tissues? First, we know exposure to cold, improper clothing, improper shoes, improper housing, diet, etc., temporarily lower the vitality. Then, on the other hand, there are certain anatomic causes of infection. Anything, as I said before, which lowers the vitality of the tissues will predispose to infection and inflammation. I have here some drawings which illustrate the various anatomic obstructive lesions of the nose. We find in Ziegler's pathology the statement that anything that obstructs drainage and ventilation of a cavity lined with mucous membrane, will lower the vitality of that mucous membrane and predispose it to infection and inflammation. That leads us to the study of what the anatomic conditions of the nose are which obstruct drainage and ventilation; and wherever we find such obstruction we have a condition which predisposes to infection and to reaction and the reconstructive processes of inflammation.

First, here is a deviation of the septum (indicating drawing). Here is the middle turbinate, here the infundibulum, which is a gutter on the

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outer wall of the nose. Into this drains the antrum of Highmore, and in about 50 per cent. of cases the frontal sinus also drains into it, and in the other 50 per cent. drainage is directly into the middle meatus of the nose. Most of the anterior ethmoidal cells also drain into the infundibulum. You will observe that the high deviation of the septum crowds against the middle turbinate, which in turn encroaches on the hiatus semilunaris and obstructs the infundibulum and the sinuses draining through it. Chronic obstruction means chronic predisposition to infection; hence, chronic infection and inflammation of these sinuses. If the infection were transitory, as from exposure, and there was no obstructive lesion in the nose, the infection and inflammation would be transitory or acute.

The second condition in the nose which may produce obstruction to the drainage and ventilation of the anterior group of cells, is hyperplasia of the middle turbinated body. (Shows drawing.) The great thickening of the mucous membrane crowds on the hiatus semilunaris and obstructs the drainage of the frontal, ethmoidal and maxillary sinuses, and predisposes to chronic infection and inflammation of the anterior group of sinuses.

The fourth drawing shows a large cell in the middle turbinated body. The middle turbinal is very thick and obstructs the drainage and ventilation of the infundibulum and all the sinuses draining through it, hence, predisposes to infection and inflammation.

The fifth drawing shows an enlarged bulla ethmoidalis, which obstructs the infundibulum, as it overhangs the hiatus semilunaris, and being thus enlarged impinges on and closes off the infundibulum and prevents drainage and ventilation of the anterior group of sinuses.

These and other lesions which are in close anatomic relation, I have named "The Vicious Circle of the Nose." The obstructive lesions have all been described in the several lesions, and, for the sake of brevity I refer to them as the "vicious circle of the nose." I have referred to six or seven anatomic lesions in the nose which may produce obstruction to drainage and ventilation. If the obstruction to drainage and ventilation is one or more of these fixed anatomic conditions we have a permanent predisposing cause to infection. If the feet are exposed to inclement weather, or the general system, by living in a poorly ventilated house, a temporary or intermittent lowering of vitality occurs and an acute sinuitis may result. The patients who have permanent pathologic and anatomic obstructions to drainage and ventilation have a permanent impairment of the vitality of the mucous membrane within these sinuses. Hence such a patient is most apt to have a chronic ethmoiditis or a chronic sinuitis of the frontal and maxillary sinuses.

If there is permanent obstruction to drainage and ventilation you should expect chronic sinuitis; or if a temporary condition, as wet feet, lowers the vitality you might expect a temporary inflammation, i. e., acute sinuitis.

If the sinus disease is caused by simple exposure or indiscretion then you must expect to have only transitory disease to deal with. You would

ordinarily treat a case of acute sinuitis by applying a solution of cocain and adrenalin to the middle turbinal region. These together with heat and other simple measures and cathartics, will usually cure a case of acute sinuitis.

I differentiate between acute primary sinuitis and an acute exacerbation of a chronic sinuitis. If you have a permanent obstructive lesion of the nose that interferes with drainage of the sinuses you should remove the obstructive lesion. It may be a deviated septum, various diseases of the middle turbinated body, luxation of the middle turbinated body, or it may be an enormous bulla ethmoidalis—or two or more of these may be present.

If the chronic disease is of a comparatively recent origin, and the change in the mucous membrane of the sinus has not been very great, then it might be simply treated and controlled; that is, removing the middle turbinated body away from the lateral wall of the nose may be sufficient to establish drainage and cure the disease. If the obstructive lesion is an enlarged bulla turbinalis, then the removal of the middle turbinated body might be sufficient to cure the disease. If it is a very large bulla ethmoidalis the bulla should be removed. That may be sufficient to establish drainage and ventilation and result in a cure. If the disease is very old and chronic, and pus has been discharging for months or years, and the mucous membrane within the cells has undergone great pathologic changes, these measures will not result in a cure in all cases. Indeed, they will nearly always fail. When great pathologic change has taken place it becomes necessary to remove the ethmoidal cells, or if the antrum and frontal sinuses are involved the antrum must be exposed by some radical measure, and the frontal sinus operated on by the Killian method, or some modification of it.

So you see the pathology enters very largely into consideration. The removal of the etiologic anatomic lesions is only effective in early stages and simpler forms of chronic inflammation, but in very old chronic cases, in which great changes have taken place, the etiology is only of secondary importance, because you must then do a radical operation on the sinus involved.

I want to make a few practical remarks about operations on the sinuses. First, about the antrum of Highmore. Shall we curet the antrum of Highmore? I am indebted to Robert C. Miles, of New York, for what I give you now on this subject. Dr. Miles told me a few years ago that he had ceased to curet the antrum of Highmore. Why? Because the antrum of Highmore is usually so large that it will not become filled with granulation tissue after curetment. Even when there are great pathologic changes in its mucous membrane the antrum needs only to be opened widely by operation, and it will usually heal up and leave a comparatively healthy mucous membrane covering its cavity. Do not curet. Since he told me this, I have never curetted the antrum, and I have had most brilliant results. No matter how degenerated the membrane may be, I leave it (of course removing the polypi if present) and

it shrinks down and becomes fairly decent mucous membrane, much better than if curetted.

Then the question arises, why is the Killian operation, which includes the curetment of the mucous membrane and periosteum of the frontal sinus, successful? In the antrum operation you do not curet, because it is so large it will not become filled with granulations. In the Killian frontal operation you curet because the sinus is smaller and usually becomes filled with granulation tissue, hence will not continue to suppurate. If, however, the sinus does not become filled with granulation tissue, it will continue throughout life to discharge pus, as the granulation tissue never becomes covered with epithelium. If the frontal sinus is an enormous one, you do not get a complete filling in with granulation tissue but ordinarily you do get the frontal sinus completely filled with granulation tissue; it fills up completely and never again discharges pus.

If you have a very small antrum you may curet it, but do not curet a large one.

Here is a drawing showing the vascular supply of the lateral wall of the nose. Posteriorly is a branch of the middle meningeal; this branch is the bloodiest one of the nose. I formerly feared it very much. Then above and posteriorly is the posterior ethmoidal, and more anteriorly the anterior ethmoidal branch coming down. These are of very little consequence as far as hemorrhage is concerned. On account of my fear of the hemorrhage that was liable to result following operations on the middle turbinated body particularly, I formerly packed the nose twenty-four hours to prevent hemorrhage, but after a time I became accustomed to a little hemorrhage, and did not mind it, and left the packing out altogether, and took a chance on a severe hemorrhage. But a real hemorrhage that endangers the patient does not happen once in 150 operations. So I take great liberty as to packing the nose; indeed, I rarely pack the nose. Packing the nose is exceeding dangerous, more dangerous than the hemorrhage. In one of our large cities I was told three years ago, that in one winter they had four deaths from the removal of the anterior end of the middle turbinated body. They died from meningitis. Death occurred in all probability because they packed to prevent hemorrhage. I do not know this to be true, but that's my impression. The nose is a dirty cavity and you cannot keep it clean. The patient must breathe through it, and if you pack it you prevent drainage, which is so essential. Packing prevents drainage of the upper part of the nose and very commonly develops a septic condition. I would take a little chance on hemorrhage rather than on meningitis. The patient will not bleed to death before some one gets there to check the hemorrhage.

I would like to say a word about the complications of sinuitis, but I want to say a word about another matter which will take up all my time.

Let this represent the nasal septum (indicating); here is the superior turbinated body; here the middle; here the inferior. In doing ethmoid work I developed a certain idea. I have done 900 operations on the

ethmoid, not all done for suppurative diseases of the ethmoid, but many hyperplastic conditions and what not. Here is the orbit and there the antrum of Highmore. Here are the ethmoidal cells between the orbit and superior turbinated and middle turbinated bodies. Professor Killian, a year or two ago decided in his Killian operations on frontal sinuses he should modify his operation. He had one death from meningitis extending via the cribriform plate. He formerly removed the entire ethmoidal mass by curetment; just scraped it out indiscriminately and thought it was the proper procedure, but when he had this death he thought if he would curet the ethmoid cells and leave the superior and middle turbinals (the ethmoidal plate), that he would prevent the infection extending around it to the cribriform plate. He thought that would interfere with the transmission of the infection. Still I am not convinced that this is a rational procedure. Professor Killian has done about 150 frontal sinus operations by his method, and this was the only death out of the 150, that died of meningitis by direct extension through the cribriform plate. I have done about 900 total exenterations of the ethmoid including the superior and middle turbinals without causing meningitis. I therefore think my results more significant than his. If you leave the plate, we have two spaces, each of them narrow. The mucous membrane after the operation becomes swollen on the four walls, and that wall causes obstruction in space number one; it may also become swollen on these two walls (indicating) and you get obstruction in space number two. Always leave a big open cavity rather than two small ones. It is a rule to work by.

In my ethmoidal work and Killian operations I believe that I should not leave the ethmoidal plate, as by so doing I leave two narrow spaces which may become closed by swollen tissue. I believe I should remove the ethmoidal plate because when I do so it is impossible for the mucous membrane on the orbital and on the septal walls to swell enough to close up the space. I always leave a good free opening after my operation, which I could not have if I left the turbinated or ethmoidal plate. Personally I do not believe Professor Killian draws a good lesson from his case. I believe we should always remove the ethmoidal plate and leave a big cavity which allows free drainage and ventilation of the operated area.

DISCUSSION

Dr. Joseph Beck, Chicago: There is very much to discuss on these fundamental and well established facts of anatomical divisions of the nose in reference to sinuses. Dr. Ballenger and I have settled this and talked it over and we absolutely agree on these points. However, there is something that may be added from a pathologic point of view. While the anatomic conditions which he mentioned have a great deal to do with these conditions, there is a true pathologic change in the tissues that need not necessarily be associated with deformities and still subject the patient to recurrent attacks of sinuitis and in fact keep up a chronic trouble. The study of these pathologic changes of course necessitated a number of things, not only by the naked eye, but to go further and make a microscopical study of the changes. I have studied this subject in the last few years by saving these tissues and examining them and I have been repaid by getting

a clear idea of why some of these cases continue to bother the patient in spite of the best operation possible. There are various types of degenerative processes of the sinuses and cells. The anterior group is all Dr. Ballenger talked about, so we will stick to them because the anterior group of cells are the principal cells involved.

After all the work that has been done on the middle turbinated and ethmoidal cells, the real trouble as far as suppuration is concerned in most instances still continues and these patients are subject to recurrent attacks of acute rhinitis and sinuitis.

We are indebted to Killian for the radical frontal sinus operations. The objection to that is on account of the deformity that that operation caused in the large majority of these cases. To obviate this I have developed an operation whose technic is about as follows: Eradicating the mucous membrane of the sinus completely to the bone; furthermore, scrape the bone lightly so as to get a free bleeding so the bone will easily granulate. Keep the cavity open until it has been reduced to a minimum sized cavity by soft granulation. You are all acquainted with the Moorhof plug of spermacetic wax, iodoform, etc., and I have substituted this by the injection of bismuth mixture with paraffin and wax. The details of this operation are the following: The skin incision is somewhat as Killian's, extending down to the ethmoid and making an opening into the anterior wall large enough so the cavity may be explored. You have your *x*-ray picture to guide you. Then remove very carefully the mucous membrane. After the thorough removal of the mucous membrane pack with gauze saturated with red iodid of bismuth. The reason we use bismuth is that we have found it stimulates granulation better than anything else. Then an opening is left at the inner extremity with a solid rubber tube, such as a catheter tube or a stomach tube which will not collapse, and this tube is anchored by two stitches to the skin. This tube and gauze after three days may be removed and the cavity filled with Bismuth paste No. 2. In the majority of instances one injection is sufficient, though it may require an injection two or three months later. The resulting scar is very small usually, and if it should be large it is easy to excise it subsequently.

Operation on Antrum. The operation may be described as follows: By raising the lip and making the incision on the inner surface of the lip, away from the gingival margin, leaving a nice flap to be dissected off and used for suture subsequently in closing the wound. Then go right down to the bone over the canine fossa of the superior maxilla, and elevate all the structures as far as the infraorbital margin. After that the well instructed assistant uses two retractors, one that pulls the lip up and the other pulls all the soft structures covering the anterior surface of the supra maxilla forwards. Then make a trephine opening and rapidly remove the entire wall of the antrum anteriorly up to the infraorbital margin; then remove the mucous membrane from the interior of the antral cavity the same as in the frontal sinus. A firm rubber tube is sutured into the inner angle and the cavity packed as in the frontal sinus with bismuth gauze and in a few days replaced by Bismuth Paste Nos. 2 and 3. Injections are made for a longer period than in the frontal sinus as a rule.

Dr. Ballenger (closing): I wish to simply state that when speaking of Dr. Miles' work I forget to mention Dr. Beck's work and I was somewhat impressed by it. Of course, I have not seen results, but it made a very profound impression on me. If Dr. Beck's method will produce a complete filling in of the antrum you can curet the mucous membrane. To me it seems to be difficult in some cases. The posterior part of the nasal wall is very thin. Then in these exceptional cases where there are accessory openings, that would render his operation impossible. If you get complete filling in by Dr. Beck's method, you must absolutely wall off all the nasal secretions and the secretions from the mouth, but if that can be done it will be an excellent method.

PRIMARY MELANOTIC SARCOMA OF THE IRIS, FOLLOWED BY EXTENSIVE METASTATIC MELANO SARCOMA OF THE LIVER

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The history of the case here recorded is the basis for these general remarks bearing on the clinical features of sarcoma of the iris and chorioid.

The literature, as well as clinical experience, shows that the metastasis, either local or general, is usually longer delayed when the primary sarcoma is still intraocular, small and located in the posterior half of the globe—especially posterior chorioid. The growth of a sarcoma in the iris or chorioid is relatively slow, though as a rule melanotic sarcoma elsewhere progresses and multiplies rapidly, e. g., hepatic sarcoma. Any intraocular sarcoma which perforates the globe causes the earliest known general metastasis. Fortunately, these cases are rare.

Should, however, the sarcoma be in the ciliary body or iris, metastasis is soon to be expected, though the primary tumor (in iris) has been removed even early in its growth. This latter is particularly true when a tumor is in the root of the iris, small and accompanied by little reduction in vision, and though recognized early, as patients dislike to sacrifice "a seeing eye." Very frequently these patients are more or less encouraged in resisting enucleation by their attending physician who favors iridectomy. An iridectomy is but a tantalizing operation, often being a direct stimulus for producing metastasis. This because of the fact that many of these iridic sarcomata in the very early stages are readily mistaken for little mounds of iridic pigment. Every little, discrete or circumscribed suspicious mound of pigment, irrespective of its location in the iris, accompanied by even the slightest vascularization should be carefully studied and watched with reference to its increase in size. For, should it increase in size and vascularity and corrugate the immediate iris tissue, then this little mass should be looked on as being suspicious of sarcoma, removed by a suitable iridectomy and subjected to the microscope. If, on examination, the suspicions of sarcoma are verified, then a radical enucleation, irrespective of the state of vision, should be insisted on.

In this regard it matters not how small the tumor or where its location is in the iris. The hesitancy to enucleate because the sarcoma is small, situated in the readily accessible portion of the iris and apparently easily removed by an iridectomy and no other signs of sarcomatous involvement, is but tantalizing fate, jeopardizing the longevity of the patient and subjecting him to the dangers of a most harrowing death, usually due to extensive hepatic melanotic sarcoma. Though we class sarcoma as melanotic and leukomatous, yet, every sarcoma is more or less melanotic—only the ones apparently deficient in pigment are designated as a leukosarcoma in a purely empirical morphologic classification.

The gravity of metastasis seems to be in a measure proportional to the melanosis, and the rapidity of growth of the primary sarcoma itself

is likewise in a measure proportional to the melanosis. The nearer a sarcoma resembles a typic fibrosarcoma the more often do we find a relative scarcity of melanosis. In this class of tumors one may, on broad general principles, say that the dangers of an early ocular general metastasis is in inverse proportion to the melanosis and fibromatous nature of the sarcoma. As the sarcoma in general manifestly partakes of the pigmentary nature of the tissue in which it originates, i. e., a greater melanosis the more heavily pigmented the tissue is, we can readily see that a true leukosarcoma is a rarity in the iris and chorioid; though most, if not all, have a decided creamy colored caste, owing perhaps to the varying amounts of accompanying exudates.

Since, also, the dangers of early metastasis are greater when the primary sarcoma originates in a highly vascularized tissue, therefore, we can see the gravity of the condition when we have such a growth in the iris or chorioid. Particularly is this true of the iris, as it is the most vascularized tissue for its size in the body. And, as the sarcoma travels mainly via blood-channels, we can readily see that, unless a radical operation is performed, the patient is always in danger of an early localized recurrence or a general metastasis — usually hepatic. In many instances local and general metastases go hand in hand after the primary excision of the growth in the iris. That a small percentage of cases show an apparent cure after iridectomy is no just reason why we should subject the large balance to such dangers. On the other hand, there are many evident conditions in an iris sarcoma which all point to unavoidable local or general recurrences should an iridectomy be deemed a sufficient radical measure. The mere fact that it grows slowly is no proof that metastases appear slowly—rapidity of growth and metastasis are not proportional even though melanosis and metastasis are seemingly so.

It is no doubt true that sarcoma cells may be carried to distant parts, then lie dormant for many years not producing a tumor, though the original tumor was removed apparently sufficiently early. These transferred cells do not grow until a stimulus therefor has been engendered. Whether or not these malignant growths are or are not caused by misplaced embryonal cells does not alter the status of metastasis or malignancy.

If one had any definite and positive facts which would tell us when, and when not, a primary sarcoma of the iris would, or would not, give rise to a metastasis after an iridectomy, the proposition would be entirely different. But being unable to determine this in any way, iridectomy should never be considered.

General surgical principles, therefore, unswervingly teach and demand a radical operation for any malignant growth — especially in a densely vascularized tissue or one abundantly supplied by lymphatics, in order to give the patient the best chances for recovery and the avoidance of metastases. These principles likewise teach a radical operation for even a small malignant growth irrespective of its nature. Hence, an eye, and the iris particularly, being an exceedingly vascular structure, harboring

a sarcoma of any type or size, an enucleation is the order of procedure as soon as a diagnosis is made.

The only legitimate reason for an iridectomy in sarcoma of the iris is for diagnostic purposes, which should be made instanter at time of operation, and the enucleation should follow within as short a period thereafter as is necessary to determine the malignancy of the growth. No iridectomy of any size—unless the entire iris is removed, and this is impossible — can be considered a radical operation from a surgical standpoint.

Intraocular sarcomata, especially those of the iris, are seldom if ever encapsulated (a rather massive exudate walling the tumor off). It is only the so-called encapsulated variety that will permit of anything less than a radical excision or enucleation with seeming success. The sarcomata of the iris are usually vascular and not "encapsulated," while the fibrosarcoma is frequently in a sense avascular. Therefore, the former shows greater tendencies than the latter to local or general metastases. The mere fact that an iris sarcoma is less frequently accompanied by an "encapsulating exudate" than is the sarcoma of the chorioid, and is of relatively slow growth is no criterion that metastases are also slow in developing. Yet this fact seems to give a sense of security to operators who think an iridectomy is sufficient when in truth no condition of the sarcoma can foretell the metastasis. It is because of this fact (encapsulation), perhaps, that a primary chorioidal sarcoma offers a far better prognosis than an iris sarcoma.

Nearly every chorioidal sarcoma is accompanied by an encapsulating exudate, some more, some less; the more the better. It does seem as if this enveloping exudate has a tendency to retard metastasis. This point was noted in quite a few cases.

By far the majority of the iris sarcomata are situated in the more vascular portion of the iris. No cogent reason can be assigned for this selection. Accordingly, a sarcoma near the root of the iris, or between the root and the larger vascular circle, is more prone to metastases than one between the larger and the lesser vascular circle or one between the lesser and the pupillary edge.

The iris is most vascular just at its root and a millimeter or so from the pupillary edge. And, as a majority of sarcomata appear in these two regions, the necessity for an early and radical enucleation is well taken from the previous remarks. The melanosis also seems to be greater, the nearer the tumor is situated to the iridic root and the ciliary body.

As all sarcomata are more or less melanotic—some having but limited areas of melanosis, others apparently very melanotic, yet on examination prove to be only sparsely so; and, as the melanosis seems to bear a relative proportion to the early metastasis, therefore, one can reasonably conclude that patients living fifteen or twenty years after the enucleation for an iris sarcoma were cases in which the sarcoma was not intensely melanotic or belonged to the order of fibrosarcomata. Indeed, the fibrosarcoma shows a greater tendency to a so-called encapsulation than does any other variety, even though it may be intensely melanotic.

Whether the sarcoma is largely made up of small round cells or spindle cells does not alter the question of metastasis as explained on the ground of melanosis.

Surgical experience and principles have proven that of all malignant growths, the sarcomata, especially when encapsulated, and when situated

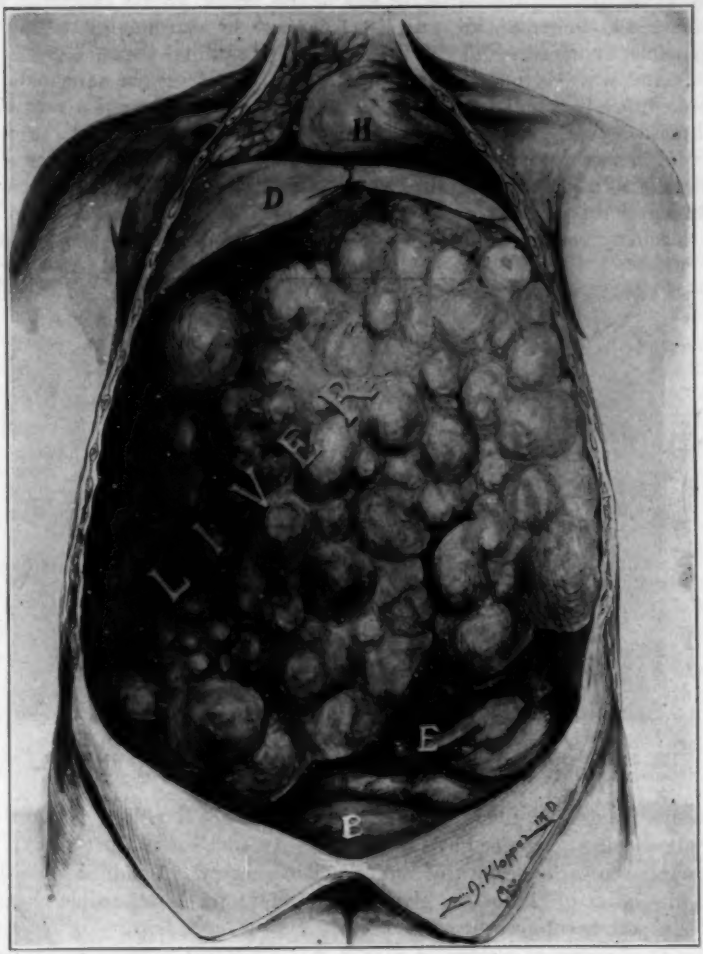

Fig. 1.—Case described.

in an easily and readily accessible position and when radically removed, seldom cause very early local recurrences, or very early general metastases.

A recurrence after five or more years, after an iridectomy, does not constitute a valid cure for the interim, but such a freedom is only palliative or bridging the chasm of dire end-results, as metastases are only too liable to supervene. But, if after an enucleation five or more

years should elapse, without a local recurrence in the socket, then the probabilities for a general metastasis or local recurrence is indeed a minimum danger. That this contention is well founded and that the patient usually lives his allotted, or nearly his allotted space is a hundred fold as great as when only an excision of the iris is made. No matter what the state of the vision, or size of iris tumor, always enucleate, and above all, enucleate with as little damage to surrounding tissues as possible, undue bleeding and interference with orbital tissue.

And why—because by far the majority of intraocular sarcomata, as stated, are primary growths—a metastatic ocular sarcoma is a *rara avis*. Indeed, some maintain that it never occurs. Therefore, this growth being the primary one, still limited and practically isolated, it does seem drastic to insist on removal of an eye, still having 20/20, or thereabouts, vision, for a sarcoma of the iris no larger than a pin head, when an iridectomy can be so easily made, with apparent success, and seeming

Fig. 2.—An exenteration of orbit, maintaining a small socket so as to wear a shell. Iris sarcoma with final hepatic metastasis and death within two years.

entire removal of tumor. But, iridectomy is not a radical measure as radicalism is understood by the surgeon. An enucleation, that only, is in compliance with the idea of radicalism in surgery. A radical operation is the order of things for giving that patient the best possible chances for a permanent recovery.

An observation worthy of note is this, when the intraocular sarcoma is accompanied by a liberal exudate into the surrounding tissues, walling it off as it were, the prognosis is infinitely better than when no exudate is present. In passing, we can say that a single intraocular sarcoma offers better prognosis than a multiple growth. For, every other growth, other than the first, or single one, is a local metastatic one—there is no such a manifestation on record as a multiple intraocular sarcoma. To

repeat, sarcoma of the iris shows early evidences of local iridic metastases, hence, the fallacy of an iridectomy. Sarcoma of the chorioid, unless well forward, does not exhibit this marked tendency to early local metastasis. But a chorioidal sarcoma in the region of the ciliary body exhibits the same tendency for local metastases as one in the iris. A sarcoma of the iris near the root is significantly prone to early metastases, next in frequency when located between root and larger blood circle. Then comes the one in between the larger and lesser vessel circles and the one having the least tendency to an early local metastasis is in the pupillary edge or between this edge and lesser blood circle. However, these facts offer but a slim consolation and ought not to determine whether to do an iridectomy or enucleation. No matter what may be the inherent characteristics or individual peculiarities of the iris sarcoma — an enucleation is obligatory.

As already stated every sarcoma is melanotic, even a leukosarcoma has pigment, and the viciousness of the sarcoma apparently seems to be proportional to the amount of pigment it possesses. Yet, frequently, a so-called leukosarcoma will suddenly become heavily pigmented. Then why try to differentiate as to the prognosis, as some endeavor? True, the leukosarcoma is more frequently on the order of a fibrosarcoma than is the melanotic, yet there are no signs by which one can tell when an apparent leukosarcoma will become entirely melanotic or attain sufficient melanosis as to be classified as melanotic rather than as a so-called leukomatous sarcoma.

Every local metastasis after a primary excision of that portion of iris containing the sarcoma, distinctly increases manifold times the dangers of a general metastasis, particularly hepatic. A search of the literature of such cases shows that the fatal end occurs usually within five or less years. There are cases in which an early enucleation for the iris sarcoma was made and the fatal metastatic condition delayed five to fifteen years; and, in many cases the patient lived his allotted span and died of intercurrent trouble.

The following case history and pathologic report by Dr. Grosvenor exemplifies all the points above made:

Mrs. A. H., aged 29 years, was first examined by Dr. Suker in June, 1907. The following history was obtained.

In 1901 the patient first noticed a small black spot in iris above the pupil of the right eye. This was directly after a full term pregnancy. Dr. Harper of Chicago was consulted, and in December, 1901, performed some conservative operation for removal of the growth, presumably an iridectomy and followed it with *x*-ray treatments for eighteen months.

No recurrence was noted until March, 1904. The cure, at the time, was thought complete as two years and three months had intervened; then within two months the growth attained the size of a large pea. So that in September, 1904, Dr. L., of Hastings, Mich., performed a second operation without removing the globe. In February, 1905, the growth was again noticed and treatment was undertaken with some patent preparation without result. She did not report again until October, 1905, when condition was so much worse that the globe and surrounding diseased tissues were fairly well extirpated, the wound healing slowly.

Dr. Bonine of Niles, Mich., reported finding at this time several peculiar growths at the limbus of the cornea—small and somewhat pigmented. During the interval she again gave birth to a healthy child.

In March, 1906, small dark nodules were again noticed in the socket and Dr. Harper advised "therapeutic light" treatments. This was continued for two months.

On May 28, 1906, she was examined by Dr. E. V. L. Brown of Chicago. He noted two small dark nodules on the surface of tissues in the socket. Left eye was found normal other than a large refraction error, which was corrected; + 5.00 cy. axis 80″=20/40.

In November, 1906, the patient reports having much pain in the right socket. The two bluish pigmented areas beneath the mucous membrane at the apex of the socket are increased in size. Cachexia is very noticeable.

In January, 1907, she returned and reported that she was six months pregnant. The bluish area is now distinctly black and still larger. Exenteration of the orbit was advised. In June, 1907, when Dr. Suker first examined her, further history was elicited.

The patient has borne five children. During her third pregnancy she first noticed the black spot above the right pupil. During the intervals between her pregnancies there has seemed to be no growth of the tumor, but when pregnant the progress has been rapid. She has now a healthy child two months old. Since its birth the tumor in orbit has increased in size and finally became very painful and the lids and surrounding tissues edematous.

On July 12, 1907, Dr. Suker did a complete exenteration of the orbit and sinuses. A large node about the size of a small egg was found in the orbit. The upper lid was involved and was partially removed, the edge of lower lid was also removed and the two stitched together, after packing the orbit with gauze, leaving an opening at the external canthus, for drainage. This wound healed kindly and rapidly. While on the operating table a careful bimanual examination of pelvis and abdomen was made revealing many small nodes.

In December, 1907, because of much abdominal pain an exploratory abdominal section was made (Drs. Gronnerud and Pennington). The entire liver was found studded with various sized bluish black nodules. Nothing further was done, and from this time on the abdomen rapidly became larger. There was a marked cachexia at this time. She died April 23, 1908.

At the post-mortem examination the liver (see cut) and left eye were removed; the right orbit was clear of any diseased tissue. There were no local recurrences in exenterated left orbit.

Pathologic examination of the nodule from the orbit.

An irregular egg-shaped nodule encapsulated, 20x15x15 mm. in size. On the outer surface was an irregularly thickened layer of epithelial cells. Elsewhere there is a capsule of fibrous tissue.

Stained sections were made of the tumor in its largest diameter. These present many irregular areas of variously stained cells, some areas made up chiefly of large round sarcoma cells with very scant pigmentation; others, however, are very densely pigmented. Separating these areas are thin fibrous bands. Some alveoli contain nothing but darkly pigmented cells, while others in immediate apposition may be entirely free from pigment. The pigment granules are imbedded in spindle or stellate cells—chromatophores. These chromatophores in some places are in parallel lines, again they are in irregular clumps, where they are densely crowded about the new blood-vessels. About some of the larger and older blood-vessels, near the margin of the tumor there is more or less infiltration of small round cells. Again, areas of tumor structure

densely infiltrated with blood corpuscles, apparently a pouring out of blood from the new formed blood-vessels. Where melanosis is scant there are the small round sarcoma cells. Again other areas seem to be made up of spindle cells, with more or less pigmentation. The most densely pigmented areas are chiefly of large round cells compressed into all sorts of irregular forms and densely packed with the pigment granules.

Altogether this presents a typic picture of melanotic sarcoma secondary to the primary involvement of the iris as noted in the history.

The liver showed many necrotic foci and innumerable sarcoma nodules throughout its entirety.

The conclusions aptly to be drawn from this case are:

1. The marked tendency for local recurrence in the iris of the sarcoma.
2. The marked tendency for local recurrence even after enucleation.
3. The enormity and rapidity of the hepatic metastasis, after the sarcoma started on its way to increase in size, after the birth of the last child.
4. That each pregnancy (four in all) was associated with a local metastasis—beginning with the primary iridectomy.

RINGWORM INFECTIONS AND THEIR MANAGEMENT*

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Infection with the ringworm fungus is an extremely frequent occurrence and in this city, as reports from our department of contagious diseases show, is of considerable economic importance. The figures show that in 1908, 358 cases were excluded from schools by the examining physicians; in 1909, 1,003 cases, or nearly three times the number of the previous year; while in 1910 but 494 cases were excluded as a result of ringworm infection. The discrepancy between the cases excluded in 1910 as compared with those excluded in the preceding year I cannot explain. It is almost certain, however, that there are more cases to-day than there were even in 1909. In a most excellent paper read in January, 1909, by the late Dr. Hyde, he said that he believed that there were more cases of ringworm and favus in Chicago than in Paris, where on one service alone 1,800 cases are treated annually, for which statement he gave the following reasons:

1. The slums of Chicago are reported in Scotland Yards, the English central police investigating bureau, as worse than those of London or New York.
2. The population of the lowest social class in Chicago is mixed, that in London and Paris is much more homogeneous.
3. School inspection and care of ringworm cases is conducted in the capitals of Europe by men who have the opportunity to devote the most scrupulous attention to the cases in hand and to use the most approved treatment.

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* Read before the Chicago Medical Society, May 29, 1912.

The figures above cited then represent merely those cases reported by the school examining physicians and nurses, and hence may be taken to represent only those cases of school age excluded, omitting a large

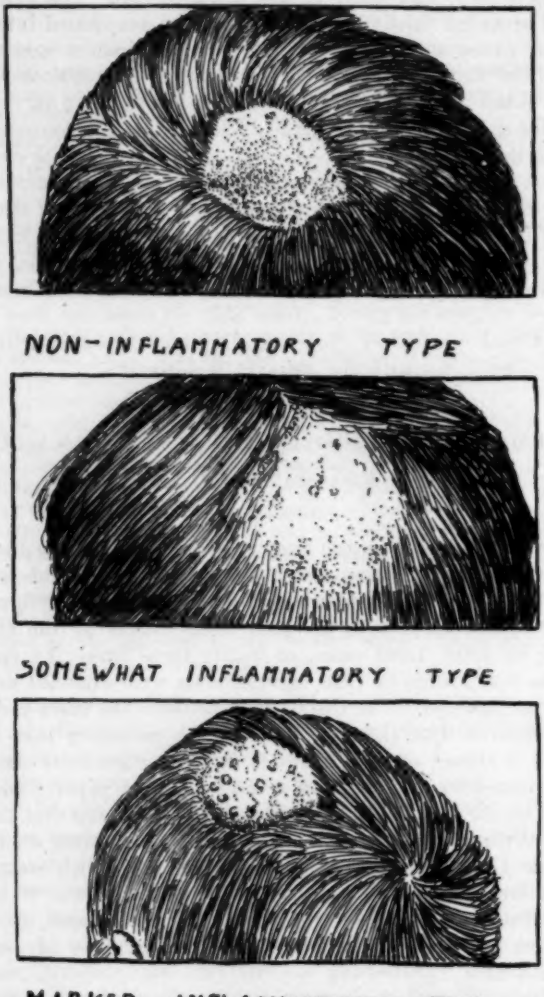

Fig. 1.—Ring-worm of scalp, showing three clinical varieties.

number of cases affected before the sixth year and a certain number that are unrecognized. The city of Chicago, like all other cities in this country, makes no provision for children affected with ringworm. The recognition

of ringworm prevents the child from continuing his schoolwork until he is cured. This means that such children may have to absent themselves from school for periods varying from several weeks to one or two years. Many cases of tinea tonsurans or ringworm of the scalp lasting under the ordinary treatment even longer than the time suggested. The great waste of time for some of the children is very apparent, and not only that, but many are deprived once and for all of school advantages during the period of treatment or neglect thereof.

It is not my intention to intrude any more figures to show how great the loss is to these children nor to astound with calculations showing the number of school hours or days missed by them. However, I believe when one views the subject frankly that no provision for the education of these children is made while affected with ringworm, and no adequate treatment supplied except by certain dispensaries and medical schools; that the economic loss to these children and to society as a result of this disease cannot be overestimated.

Ringworm infections are due to various fungi and the credit is largely Sabouraud's for a thorough classification of them. Gruby, however, in 1841, recognized the plurality of the causal fungi and as early as 1853 Bazin published an article confirming Gruby's observations. Malmeston, in 1844, quite independently discovered one of Gruby's fungi which he called "trycophyton tonsurans," which until quite recently was thought to be causal in all ringworm affections. Sabouraud's investigations make two chief divisions of etiologic fungi: 1. The microsporon audouini or small spored fungus, and 2, the trycophyton or large spored fungus, the latter having two main varieties, the endothrix and ectothrix, of each of which in turn there are several species. A detailed description of all of these would lead us too far and has no practical value for the clinician.

Ringworm is contracted by contact with persons suffering therefrom or with contaminated articles such as caps, brushes, towels, combs and razors. Cases of direct infection from infected animals are authentic, especially from the horse, dog and cat. I have seen a case in a hostler in whom the infection was positively traceable to the horse he had been caring for.

Ringworm may be of general distribution or confined to either the hairy or non-hairy parts. In children we are chiefly concerned with ringworm of the scalp because of its frequency and difficulty of treatment, although the non-hairy parts are often involved. In order not to intrude too much on your time I shall not discuss ringworm infections in the adult more than to mention the well-recognized but difficult condition to treat hyphogenous sycosis or barber's itch, and eczema marginatum or ringworm of the inguinal and axillary regions.

Ringworm of the non-hairy parts or tinea circinata may appear on the face, trunk or extremities and presents one, several or more sharply defined, somewhat scaly, very slightly raised, hyperemic spots, which spread peripherally and tend to clear up in the center assuming thereby a ring appearance. In size the lesions vary from ½ to 1½ inches in

diameter and when several lesions merge they may form a large irregular gyrate patch. Some cases are scarcely distinguishable from pityriasis rosea of Gibert; and in fact, the Viennese school for a long time refused to recognize pityriasis rosea as a distinct condition. Recently a young girl, aged 13 years, came to the dermatologic clinic at Northwestern University Medical School for treatment. She presented what was apparently a case of pityriasis rosea, although the lesions showed rather more inflammation than is usual in this condition. Her younger brother was at this time under treatment for a large spored ringworm of the scalp contracted at one of the parochial schools. Her case may be one in which the Viennese school would still insist on a diagnosis of herpes

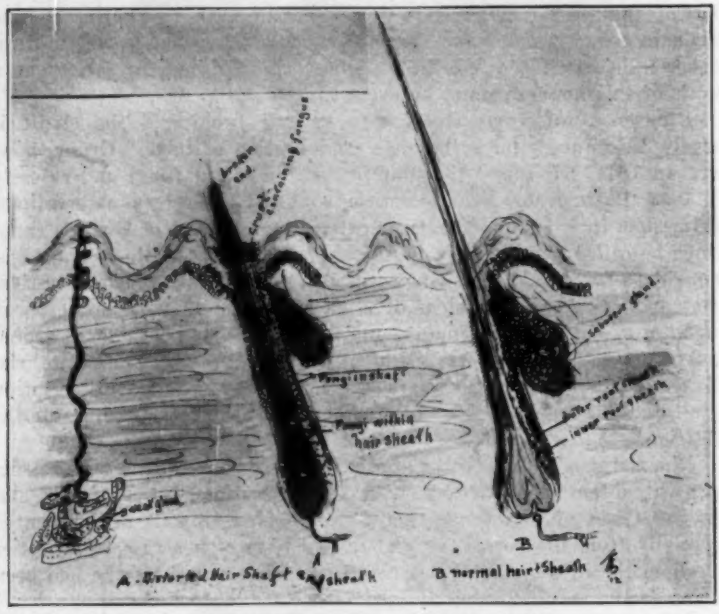

Fig. 2.—Section of scalp, showing normal hair and sheath and one attacked by ringworm fungus.

tonsurans maculosus although no fungi were found in examination of the scales. The absolute independence of the conditions in these children I believe is open to question.

The following conditions may at times simulate more or less closely tinea circinata, namely, a circinate syphilide, psoriasis and seborrheic dermatitis, but a careful history and clinical examination to which at times microscopic examination of the scales and a Wassermann reaction might be added, should quickly clear up the diagnosis in almost all cases.

Ringworm of the scalp is the most important type, and for many of the poorer children of our city and other large cities the cross which they must bear for a longer or shorter period. It is the factor which may

determine whether such child will be literate or illiterate, and therefore is of great economic and sociologic importance. It is in this type of case when the clinical diagnosis offers the slightest difficulty; a microscopic examination of an involved hair and of adjacent scales is essential to a conclusive understanding of the condition at hand. We are all familiar I take it with the usual appearance of a ringworm patch on the scalp which may, however, show variations dependent on the type of causal organism. For example, the lesion caused by the endothrix with so-called "resistant" mycelium presents a characteristic greyish-blue tint and is covered with fine furfuraceaus scales and the broken hairs in the area give the appearance of a beard of four or five days' growth. In another type the patches are irregular, poorly circumscribed and scattered broadly among the healthy hairs. Sometimes in less typical cases one notes only here and there diseased and broken hairs, while in blond children one may discover merely decolored hairs and slight scaliness. Other types are somewhat more difficult to recognize clinically. To this number must be added "kerion celsi," or the markedly inflammatory type of trycophytosis caused always, according to Sabouraud, by the tricophyton endothrix. This lesion has been frequently mistaken for carbuncle and other deep-seated bacterial infections. In marked cases it appears as a greatly elevated, swollen, reddish, painful tumor. It is usually single and may reach the size of half an orange. Fluctuation may be determined and a glairy mucopurulent or sanguino-purulent discharge is readily expressed. The hairs on the surface are easily removed causing no pain to the patient. Following the removal of the hair shafts a small amount of exudate wells up from the root sheath. This phenomenon gives us the clue "par excellence" in ringworm therapy, not only for the kerion type, but in all cases involving the hairy parts; namely the complete removal of hairs in involved areas. The removal of the hair in toto in infected areas constitutes the essential point in successful treatment in ringworm of the scalp. I say this because with the removal of the hair we not only dispose of many of the organisms, but as it were remove the stopper from the hair sheath, permitting the exfoliation of the infected lining cells and with them the etiologic fungi; furthermore, allowing what subsequent medication we may see fit to use to reach the infected parts below the cutaneous surface, if this be actually possible.

Now to return to the microscopic examination of the scales and suspected hairs. This is one of the simplest procedures, comparable with the examination of urethral pus in searching for gonococci. The procedure is best carried out as follows: The child's head is held in good light so that a clear view is obtained of the lesion and then with an ordinary epilating forceps a suspicious appearing hair, with the scales about the mouth of the follicle, is removed. If to be examined immediately it is placed in a small watch crystal containing 20 to 40 per cent. caustic potash solution, in which they are left for ten or twelve minutes, which time, however, may be shortened by heating gently over an alcohol lamp. The specimen is then placed between a clean glass slide and cover slip and examined, first with the low power of the microscope and then with

the higher power, being certain to have the iris diaphragm closed down. The oil immersion is unnecessary. If ringworm is present one sees within the distorted hairs and scales dichotomously branching mycelial threads and more or less extensive spore formation, depending somewhat on the character of the causal fungus and the degree of involvement. A description of the various pictures one may see under the microscope is not in place here and has little or no practical bearing on treatment. One will however, after a careful examination, at least know that he is dealing with ringworm, a contagious condition, and not for example with an alopecia areata or a case of psoriasis, and will be in a position to start proper prophylactic and therapeutic measures.

Briefly in regard to differential diagnosis, there are only a few conditions that closely simulate the lesions of ringworm of the scalp; especially favus and alopecia areata. Favus is not as rare in this country as might be supposed from the fact that it is a cause for barring immigrants from landing. In favus, while the same tendency to brittleness and lack of luster of the hair is noted, the presence of the characteristic scutula and crusts and atrophic scars in the healed areas are very different from the baldness and scales of trycophytosis. Alopecia areata is distinguished by the completeness of the hair loss in the areas affected and the absence of scaliness, the skin being shiny and very smooth. In either case a microscopic examination of hairs or crusts should lead to a diagnosis in doubtful cases. Eczema, seborrheic dermatitis and psoriasis should give little difficulty to the careful observer.

Having made an accurate diagnosis of the condition at hand it is necessary to treat it rationally and thoroughly and prevent the patient from infecting his relatives and associates. The child with ringworm, being usually of the poorer classes, should be placed in a school where he can, while he is undergoing an approved and modern treatment, still continue his studies and at the same time not be a source of danger to others. If this plan is not feasible or practicable at this date, I make the plea that some modification be suggested by which these children at least are given a fair chance to become useful citizens and are not forced by circumstances to be ignorant and to possibly become criminal.

The treatment of ringworm of the glabrous skin is usually so simple that we may rapidly dismiss it, for the lesions being superficial may be successfully treated by any of the many parasiticides. Of this number may be mentioned chrysarobin, beta-naphthol, white precipitate of mercury, icthyol, resorcin, salicylic acid, sulphur and many others. Apropos of this condition Sabouraud's rule says that when the parasite is superficially located it is easily killed, but when deep-seated it is unreachable by ordinary medicaments.

The treatment of ringworm of the scalp is now generally recognized to be adequately carried out only by means of the *x*-ray. To be sure, many, in fact, most cases can be cured by other methods if only one persists long enough. The time needed, however, may be very long, even two or three years. Other cases, especially those of the markedly inflammatory type, may heal spontaneously by suppuration, leaving often permanent baldness. In these cases the epilation or removal of the entire

hair is automatic and a cure is rapidly effected. Epilation, when possible (and by the term epilation I mean the removal of the entire hair and bulb), is a satisfactory but slow and somewhat painful method of effecting a cure. But many hairs cannot be epilated inasmuch as the parasite produces fragility of the hair and it is broken off leaving the contaminated deeper portion in the skin. Devergie said that he had observed in the service of so excellent a man as Bazin, children affected with ringworm, who appeared in the same condition as when they entered in spite of attempted epilation and applications of parasitic lotions and salves for months. Bodin in this connection says: "The elements of this disease deeply infiltrated as far as the root extremity of the hair find in the hair pouch a sure and inviolable asylum, for no parasiticide, whatever its form and in whatever condition employed, can penetrate by reason of the anatomic disposition of the hair shaft in its pouch." Knowing that we cannot within a reasonable time effect a cure by antiseptics and parasiticides, it is necessary absolutely that these children be given the benefit of the Roentgen rays by which the hair filaments are so readily removed.

Treatment should be carried out by a competent *x*-ray operator who is careful and certain to avoid any of the untoward effects of the rays. Generally an area responds to treatment given in the following manner: It is exposed to the rays for a period of six minutes with a medium tube, e. g., 8 wehnelt, at a distance not nearer than 6 inches from the head. In cases of larger distribution it may be necessary to expose the involved areas at different times because they cannot be satisfactorily gotten under the influence of the rays at a single sitting. In this event the parts that had been previously rayed must be covered with tin foil or lead foil or other substance impenetrable to the rays. Each area usually demands between six and eight exposures given either bi- or tri-weekly. A reasonable period, let us say, three or four weeks, is permitted to elapse during which time one expects a complete hair loss in the treated areas. If this does not occur a new series of one to two exposures may be instigated exercising, however, even greater care than in the first series. It is true that a complete hair loss may be obtained in a single sitting of longer time and with greater ray potentiality. This, however is considered dangerous and inadvisable. Combined with such treatment one may use green soap washings and painting with tincture of iodin, although this is not absolutely necessary. The healthy hairs, some weeks after the cessation of treatment, usually commence to grow in anew. The disfigurement of baldness soon disappears. During the treatment the child should wear some material which may be discarded daily, as a lining in his cap, and should be forbidden to exchange under any circumstances his cap for that of another.

Furthermore let us not forget the admonition of Sabouraud to his students, "When any one tells you that he has cured an ordinary ringworm of the scalp in three weeks, reply to him that it requires at least six weeks to determine whether the patient is cured. Frequently they have cured an eczema seborrhoicum or something else, but they have not cured a case of trycophytosis. Their first error was a mistake in diagnosis and their second in the diagnosis of the cure."

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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OCTOBER, 1912

THE BOARD OF HEALTH IN REAL POLITICS

At last the conditions in the State Board of Health have reached a stage where they can be no longer ignored. This fact was brought out in the open letter addressed to Mr. Deneen by State Senator Frank H. Funk, dated Chicago, Sept. 20, 1912. Prominent among the questions asked Mr. Deneen is the following: Do you intend to retain Dr. Egan as secretary of the State Board of Health, or have you promised some members of the Illinois State Medical Society to let him go immediately after the election? This question of Mr. Funk we are pleased to notice because it brings forcibly to the attention of the profession the unusual and disgraceful method of treating this subject, which has been pursued by Mr. Deneen in the past four years. A course of conduct we may add which has estranged from Mr. Deneen many of his former friends and admirers who have lost all patience with his political methods. We have been urged by many of our members to ask the members of the medical profession, the dentists and the pharmacists to write letters to the respective candidates for governor asking what action in cleaning up the department of health he will adopt should he be elected to office. Of course, it is not part of THE JOURNAL to take up any political discussion, but no harm can be done by addressing letters such as we have indicated. It is certain that the disgraceful state of affairs in connection with the Department of Health has passed to a stage where it cannot be longer ignored by intelligent and thoughtful members of the three professions.

REPEAL OF THE SHURTLEFF BILL

The citizens' milk committee of Chicago will probably take up in a short time the matter of the repeal of the Shurtleff Bill, prohibiting the tuberculosis test of milch cows. It would be taken up now, but it seems that certain gentlemen fear that harm might result from its being injected into the present political situation. In other words, it might result in losing some votes for the present incumbent of the gubernatorial chair. This only adds another reason why medical men should get busy in exerting their influence to defeat the persons, including the *de facto* members of the State Board of Health, responsible for the passage of the bill and the governor who signed it after it was passed.

THE "TRY"-STATE MEETING

The twentieth annual "Try" at a meeting of the medical society, drawing its membership from Missouri, Iowa and Illinois, was undertaken at Jacksonville, September 24 and 25, as noted in our last issue. We understand that after the vigorous use of the press and postage as many as forty gentlemen assembled on this occasion in the Morgan County Court House, and although the circuit court room of that structure is not particularly large, these gentlemen had no difficulty in holding their meeting inside the rail reserved for attorneys. As this society publicly and conspicuously announces that membership in a county society is not a qualification necessary to membership, we reiterate our statement that it would be a good idea to abandon the organization and disperse. At least the officers should not attempt longer to secure attendance from among the members of organized societies.

RESULTS OF EXAMINATION HELD BY THE ILLINOIS STATE BOARD OF HEALTH

Examination in Springfield, June 13, 14 and 15, 1912

The results of the examination held by the State Board of Health on June 13, 14 and 15, 1912, at the Armory in Springfield, Ill., are as follows: Present, 212; passed, 158; failed, 51; three incomplete.

College	PASSED	Year Grad.	Total No.
American Medical College		1912	2
Bennett	1911 (1),	1912	4
Chicago College, Medicine and Surgery		1912	33
Hahnemann, Chicago		1912	10
Hering, Chicago		1912	1
Kentucky School of Medicine		1903	1
Marquette University		1912	1
Northwestern	1911 (1),	1912	42
Rush		1912	13
St. Louis University		1912	7
University of Illinois	1911 (12),	1912	37
University of Michigan, "R"		1912	1
Vanderbilt University		1912	1
Washington University		1912	5
			158

College	FAILED	Year Grad.	Total No.
American Medical College		1912	8
Barnes		1906 (1), 1910 (1), 1911	3
Bennett		1912	1
Chicago College, Medicine and Surgery		1912	2
College of Medicine and Surgery, "P.-M."		1908 (19), 1909 (13)	2
Hahnemann, Chicago		1912	8
Hering, Chicago		1912	1
Meharry		1908	1
Marquette University		1912	2
National Medical University		1910 (16)	1
Northwestern		1912	2
P. & S., St. Louis		1910	1
Queen's University, Ont.		1912	1
Reliance		1911 (13)	1
Rush		1912	1
St. Louis University		1912	2
University of Illinois		1911 (2), 1912	12
University of Louisville		1912	2

Below are the names of those who were successful:

CHICAGO ILLINOIS

Alcock, Nathaniel Graham
Bassler, Herman H.
Baxter, Ada Russell
Beilin, Aaron Max
Berkman, David Mayo
Beyerlein, Arthur Lewis
Bohling, Bernard Stanton
Boone, Jesse F.
Boren, John William
Boswell, Harry Dillman
Boyer, Eugene Radford
Brams, Wm. A.
Breeden, Roy Fred
Carlin, Charles John
Christoph, Carl Henry
Cohn, Emanuel J.
Cummins, Erwin Jephtha
Dale, Philip Marshall
Davis, James Robert
Delzell, David D.
Deners, Washington Irving
Di Casola, Frank
Donahue, Stephen Alphonse
Dudley, Erwin F.
Fattooh, Naum G. N.
Finley, Robert L.
Fishbein, Morris
Fisher, Arthur H.
Fisher, Erle F.
Flack, William D. P.
Freedman, Abraham Albert
Freudenburg, J. A.
Friedman, Herman J.
Frisch, Isaac J.
Goodman, Jacob
Green, Otto J.
Greenberg, Louis M.
Greening, Richard F.
Hade, Fred C.
Hagerty, Thomas Walter
Hallberg, John William
Harris, Lyndon Denny
Harris, Ella Elizabeth
Harrington, Raymond Regan
Hayes, Daniel Francis
Heidel, Cecil Theodore
Heller, Jr., Matthew
Heller, Frederick Merwin
Henderson, Curtis
Henson, Earle Edmund
Himmelman, Harry C.
Hubbard, Argal Ernest
Hutton, James Harry
Jacobs, Frederick Caspar
Jared, Vernon Meadows
Jones, David Jameson
Joyce, Paul Vincent
Knoll, Robert Frederick
Koerper, Herman Wm. Julius
Lavieri, Jack Ralph
Lobraico, Rocco Vincenzo
Marrs, Frederick Addison
McArthur, Selim Walker
McGuire, Wm. Aloysius
McLaughlin, Warren B.
Moss, Charles Taylor
Olson, Olwer S.
Pedott, Meyer S.
Peters, John

CHICAGO, ILLINOIS

Reinsch, Herman
Robertson, Arthur Thomas
Roche, Richard Ambrose
Ross, Samuel John
Rupert, Richard Root
Sanders, Audley
Sasko, Martin P.
Scholles, Alphonse Francis
Shipman, Frank Edmund
Snyder, James Elvin
Stapler, Audre Leopold
Sullivan, Charles Peter
Sullivan, Clement O.
Thomas, Abraham Fifield
Thompson, Alvin
Thompson, William John
Tir, Morris
Townsend, George
Waddington, Algernon H.
Walters, Inez Rouse
Weishew, Lewis Jerome
Whitaker, Ben Tallman
Wieneke, Clarence F.
Wilkinson, Barclay
Wyneken, Henry Otto

OUTSIDE CHICAGO IN ILLINOIS

Brandes, Harry August, Granite City
Chase, Martin Rist, Toulon
Connor, Arthur B., Wheaton
Crouch, Warner Latta, Belle Prairie
Eddington, Murtell M., Springerton
Finch, Rollae Dean, Flora
Fisher, Hart Elles, Joliet
Flexer, Howard Norton, Joliet
Flynn, Leo Howard, Bloomington
Gambill, John Milton, Johnson City
Gerow, Katherine, Evanston
Hirschle, Harry Griffith, Springfield.
Karch, Arthur W., Blue Island
Krohn, John William, Joliet
Mutschmann, Louis F., E. St. Louis
Schiele, William Christopher, Joliet
Smith, Bert, Mt. Carmel
Smith, Joseph Henry, Sherman
Sorgatz, George Frederick, Springfield
Stevens, Walter S., Hulls
Tilton, Welcome Blaine, Freeport
Trippel, Edward, New Baden
Vaughan, Willard Robert, LaSalle
Wesenberg, William Robert, America
Williamson, Arthur R., Pontiac
Wohler, Paul Reinhold, Springfield

OUTSIDE OF ILLINOIS

Allgover, Henry A., Wichita Falls, Tex.
Barker, Charles B., New Albany, Ind.
Bowman, Galen Ford, Toledo, Ohio
Bucher, Claude Earl, Milwaukee, Wis.
Caddick, Earl, Cherokee, Ia.
Carlson, Mabel Rosina, San Francisco, Cal.
Channon, Benjamin, Minneapolis, Minn.
Chatel, Arthur Narcisse, Kearsarge, Mich.
Cox, A. Milton, Bismarck, N. Dak.
Empson, Roy George, Detroit, Mich.
Engesather, John A. D., Brocket, N. D.
Etherton, Monte, St. Louis, Mo.
Henry, James Clayton, New York City
Kelliher, John Leo, Milwaukee, Wis.
Klamt, Anton Carl, Howells, Nebr.
Knapp, Arthur LeRoy, Michigan City, Ind.
Kratzenstein, Louis Robert, Escanaba, Mich.
Lauerman, Archibald Wm., West Bend, Wis.
Laurin, Vilda Samuel, Buckingham, Ontario, Can.
Lutz, Gustavo A., Rochester, New York
Marks, Walker Roscoe, Vinita, Okla.
Michael, Herman Charles, St. Louis, Mo.
Noe, Philip R., Oshkosh, Wis.
Pearce, Albert Joseph B., Pitcairn, Pa.
Porter, James Arthur, Hedrick, Ia.
Rabenneck, Paul Benjamin, Cleveland, Ohio
Reid, Wells Cook, St. Louis, Mo.
Riordan, John Frances, St. Louis, Mo.
Rowland, Delta Eulilla, Sunnyside, Wash.
Shumaker, Charles Henry, St. Louis, Mo.
Smith, Charles Henry, Portland, Ore.
Smith, William Wallis, St. Louis, Mo.
Thie, Otto William, St. Louis, Mo.
Torrance, Fred Emerson, Winfield, Kan.
Wedel, Frank LeRoy, Vincennes, Ind.
White, Sarah Marguerite, Battle Creek, Mich.
Wilson, James Lee, New York City
Woodward, Frank Albert, Great Falls, Mont.

MEMBERSHIP OF THE CHICAGO MEDICAL SOCIETY FOR TWELVE YEARS SINCE 1901

INCLUDES COOK AND DUPAGE COUNTIES

Year 1901—President, Christian Fenger. Nominal 940.
In good standing. No report, old constitution and no contribution to State Society.

Year 1902—President, W. A. Evans. Nominal, 1,050.
In good standing. No report, old constitution and no contribution to State Society.

Year 1903—President, R. B. Preble. Nominal, 1,400.
In good standing. No report, old constitution and no contribution to State Society.

Year 1904—President, J. B. Murphy. Nominal, 1,512.
In good standing. First year of new constitution. Dues of members to state society not paid until following year.

Year 1905—President, C. S. Bacon. Nominal, 1,710.
In good standing according to roster of society, 1,521. Paid State Society dues of 1,267 members for 1904, $1,900.50.

Year 1906—President, C. S. Bacon. Nominal, 1,928.
In good standing according to roster of Society, 1,338. Paid State Society dues of 1,214 members for 1905, $1,821.

Year 1907—President, George E. Webster. Nominal, 2,107.
In good standing according to roster of Society, 1,570. Paid State Society dues of 1,281 members for 1906, $1,921.50.

Year 1908—President, F. B. Favill. Nominal, 2,259.
In good standing according to roster of Society. Paid State Society dues of 1,815 members for 1907, $4,538.38.

Year 1909—President, A. C. Cotton. Nominal, 2,011.
In good standing according to roster of Society, 1,891. Paid State Society dues of 1,950 members for 1908, $4,895.

Year 1910—President, John A. Robison. Nominal, 2,199.
In good standing according to roster of society, 1,645. Paid State Society dues of 1,931 members for 1909, $4,827.50.

Year 1911—President, A. H. Ferguson. Nominal, 2,400.
In good standing according to roster of society, 1,617. Paid State Society dues of 2,191 members for 1910, $5,487.50.

Year 1912—President, Jos. M. Patton. Nominal, 2,193.
In good standing according to roster of society, 1,693. Paid State Society dues of 2,305 members for 1911, $5,762.50.

A MEDICAL DIPLOMAT FAILS IN DIPLOMACY

Dr. Edward Denison, 17 West Garfield Boulevard, Chicago, a South Side practitioner, who seems to have the luxury of a summer home on the banks of Bass Lake, Ind., is charged with the theft of automobiles, automobile accessories, motorcycles, etc., which has brought him into trouble. Dr. Denison has had a distinguished diplomatic career, having received his first diploma from the Northwestern Medical College, St. Joseph, Mo., in 1892. In 1893 he obtained a diploma of the St. Louis College of Physicians and Surgeons, St. Louis. In 1895 he received a diploma from the Illinois Medical College of Chicago.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

The thirty-eighth annual meeting of this association will be held at the Hotel Sherman, Chicago, October 22-24, under the presidency of Dr. Louis Frank, Louisville. The arrangements are in charge of the following committees:

Hugh T. Patrick, M.D., chairman; S. C. Stanton, M.D., secretary; and subcommittees with chairmen as follows: Finance, Harold N. Moyer, M.D.; Entertainment, D'Orsay Hecht, M.D.; Ladies, Mrs. Arthur R. Elliott; Reception, William L. Baum, M.D.; Exhibits, S. C. Stanton, M.D.; Clinics, A. J. Ochsner, M.D.; Transportation, J. Rawson Pennington, M.D.; Headquarters, Channing W. Barrett, M.D.; Registration, Ralph W. Webster, M.D.; Badges, William Fuller, M.D.; Hotels, Daniel N. Eisendrath, M.D.; Publicity, George F. Suker, M.D. and Pathologic and Sanitary Exhibits, Allen B. Kanavel, M.D.

MEDICAL SECTION

First Day, Oct. 22, 1912.—Morning Session

Stealy, J. H., Freeport, Ill., Sixteen Cases of Pernicious Anemia, with Particular Observations as to Etiology and Treatment.

McCaskey, G. W., Fort Wayne, Ind., The Treatment of Arteriosclerosis.

Stone, Willard J., Toledo, Ohio, The Resistance of Luetic Red-Cells to Cobra Venom Hemolysis, and the Possible Value of the Reaction.

Scherck, Henry J., St. Louis, Mo., The Leutin Test of Noguchi—Its Value in Comparison with the Wassermann Reaction.

Zimmerman, B. F., Louisville, Ky., Phylacogens, Unique Therapeutic Results, Case Reports.

Pottenger, F. M., Monrovia, Cal., Unmistakable Clinical Proofs of the Therapeutic Value of Tuberculin.

Afternoon Session

Joint Meeting of the Medical and Surgical Sections

Obstetrical Symposium

Peterson, Reuben, Ann Arbor, Mich., Caesarean Section.

Davis, Asa B., New York, N. Y., Caesarean Section.

Schwartz, Henry, St. Louis, Mo., The Management of Pregnancy and Labor in the Presence of Pelvic Contraction.

Discussion opened by E. Gustave Zinke, Cincinnati, Ohio, and Lewis S. McMurtry, Louisville, Ky.

Second Day, Oct. 23, 1912.—Morning Session

Witherspoon, J. A., Nashville, Tenn., Cardiovascular Changes Produced by Focal Infections.

Geier, Otto P., Cincinnati, Ohio, Preventive Medicine and Social Service Work in a Municipality.

Hummel, E. M., New Orleans, La., The Prevalence of Asthenic Disorders of the Nervous System in Warm Climates.

Dewey, Richard, Wauwatosa, Wis., Comparison of Predominant Forms of Mental Disorders in Admissions of Two Five Year Periods, 1907-12—1895-1900.

Reed, Charles F., Kankakee State Hospital, Hospital, Ill., Modern Conceptions of Paranoia.

Ravogli, A., Cincinnati, O., Eczema As Seen By the General Practitioner.

SECOND DAY, OCT. 23, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Symposium.—Nervous Diseases and Surgery

Norbury, Frank P., Springfield, Ill., Psychasthenia.

Frazier, Charles H., Philadelphia, Pa., Considerations of Procedures Adapted to the Exposure of Structures at the Base of the Skull.

Hoppe, Herman H., Cincinnati, O., The Diagnosis of Brain Tumors.

Stucky, J. A., Lexington, Ky., Report of Three Cases of Abscess of the Anterior Portion of the Frontal Lobe of the Brain.

Elsberg, Charles A., New York, N. Y., Experiences in Spinal Surgery; Observations Upon 60 Laminectomies for Spinal Disease, with Lantern Slide Demonstration.

SECOND DAY, OCT. 23, 1912.—EVENING SESSION

Joint Meeting with the Chicago Medical Society

Address by the President, Frank, Louis, Louisville, Ky.

Address in Medicine, Stockton, Charles G., Buffalo, N. Y., The Stomach from the Standpoint of the General Practitioner, the Specialist and the Surgeon.

Address in Surgery, Crile, George W., Cleveland, Ohio, Biologic Interpretation of Abdominal Pain and its Surgical Relation.

THIRD DAY, OCT. 24, 1912.—MORNING SESSION

Bass, C. C., New Orleans, La., A Stereopticon Demonstration of the Artificial Cultivation of Malarial Plasmodia.

Solomon, Leon L., Louisville, Ky., Hormonal, Its Therapeutic Value.

Trawick, John D., Louisville, Ky., Congenital Ptosis in Children.

Boggess, Walter F., Louisville, Ky., Paper.

Kelly, Harris, Colorado Springs, Colo., Paper.

Griffith, J. D., Kansas City, Mo., Paper.

THIRD DAY, OCT. 24, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Symposium.—Intestinal Surgery

Roberts, H. H., Lexington, Ky., Gastric and Intestinal Neoplasms. (Illustrated with Lantern Slides.)

Morris, Robert T., New York, N. Y., Notes Relative to Upper Abdominal Adhesions.

Cole, Lewis Gregory, New York, N. Y., Diagnosis of Lesions in the Right Hypochondrium. Cinematograph Demonstration.

Bloodgood, John C., Baltimore, Md., Indications for and the Technic of Resection of the Colon, with Lantern Slide Demonstration.

Jackson, Jabez N., Kansas City, Mo., Membranous Pericolitis, and Allied Conditions of the Ileocecal Region.

Selby, J. H., Rochester, Minn., Congenital Failure of the Colon to Rotate. Lantern Slide Demonstration.

Nicholson, C. M., St. Louis, Mo., The Urachus as a Factor in Intestinal Obstruction.

SURGICAL SECTION

FIRST DAY, OCT. 22, 1912.—MORNING SESSION

Symposium.—Genito-Urinary

Harpster, C. M., Toledo, Ohio, International Congress on Syphilis, held at Rome, April, 1912.

Wheeler, Carl Lewis, Lexington, Ky., The Urological Aspect of the Microscope as a Localizer of Disease.

Smith, E. O., Cincinnati, Ohio, Symptomatology and Pathology of Prostatic Hypertrophy.

Lewis, Bransford, St. Louis, Mo., Physical Examination and the Rôle of the Cystoscope in Prostatic Hypertrophy.

Cabot, Hugh, Boston, Mass., Operative Treatment of Prostatic Hypertrophy.

Wishard, W. N., Indianapolis, Ind., Pre- and Post-Operative Treatment of Prostatic Hypertrophy.

AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Obstetrical Symposium

OCT. 23, 1912.—MORNING SESSION

Carstens, J. H., Detroit, Mich., A Third Cesarean Section on the Same Woman.
Grant, H. H., Louisville, Ky., Wounds of the Thoracic Duct with Leakage.
Cordier, A. H., Kansas City, Mo., Paper.
Black, Carl E., Jacksonville, Ill., Paper.
Reed, Charles A. L., Cincinnati, Ohio, Paper.

SECOND DAY, OCT. 23, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Symposium.—Nervous Diseases and Surgery

OCT. 23, 1912.—EVENING SESSION

Joint Meeting with the Chicago Medical Society

THIRD DAY, OCT. 24, 1912.—MORNING SESSION

Giffin, Herbert Z., Rochester, Minn., Clinical Findings in Operable Splenomegaly.
Brown, George V. I., Milwaukee, Wis., Cleft Palate Operations.
Haines, W. D., Cincinnati, Ohio, The Surgical Importance and Treatment of Hyperthyroidism.
Haggard, W. D., Nashville, Tenn., Paper.
Deaver, John B., Philadelphia, Pa., Pancreatic Lymphangitis and Chronic Pancreatitis.

OCT. 24, 1912.—AFTERNOON SESSION

Joint Meeting of the Medical and Surgical Sections

Symposium—Intestinal Surgery

CLINICS

The following is the preliminary schedule of clinics to be held during the week before and the two days following the meeting:

MONDAY, OCT. 14

Surgery—

Dr. Carl Beck, North Chicago Hospital ..... 9-11 a. m.
Dr. Arthur D. Bevan, Presbyterian Hospital ..... 9 a. m. to 1 p. m.
Dr. S. Dahl, Norwegian Deaconess Hospital ..... 9-11 a. m.
Dr. T. A. Davis, West Side Hospital..... 1-3 p. m.
Dr. A. Goldspohn, Ev. Deaconess Hospital .....9 a. m. to 12 m.
Dr. M. L. Harris, Alexian Brothers Hospital.....8 a. m.
Dr. M. L. Harris, Chicago Policlinic Hospital.....11 a. m.
Dr. Norman Kerr, Chicago Policlinic Hospital.....11 a. m. to 12 m.
Dr. Paul F. Morf, Chicago Policlinic Hospital .....3-4 p. m.
Dr. John B. Murphy, Mercy Hospital.....10 a. m. to 1 p. m.
Dr. A. J. Ochsner, Augustana Hospital..... 8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....8:30-11 a. m.
Dr E. W. Ryerson, Children's Memorial Hospital.....3:30-6 p. m.
Dr. Carl Wagner, St. Joseph's Hospital.....10 a. m.
Dr. Gilbert H. Wynekoop, Lake View Hospital.....10 a. m. to 12 m.

Medicine—

Dr. Frank Billings, Presbyterian Hospital.....9-11 a. m.
Dr. Frederick Tice, Cook County Hospital.....10 a. m. to 12 m.

Gynecology—

Dr. Henry Banga, Chicago Policlinic Hospital.....10-11 a. m.
Dr. Philip S. Doane, St. Joseph's Hospital.....10:30 a. m. to 12 m.
Dr. Robert T. Gillmore, Wesley Hospital.....2-4 p. m.

Pediatrics—
Dr. Isaac A. Abt., Michael Reese Hospital....8-9 a. m.
Dr. Grabow, Chicago Policlinic Hospital....3-4 p. m.

Eye, Ear, Nose and Throat—
Dr. C. Robertson, Chicago Policlinic Hospital....2-5 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose & Throat Hospital... 3 p. m.
Dr. Wm. H. Wilder, Rush Medical College.

Genito-Urinary—
Dr. Louis Schmidt, Chicago Policlinic Hospital....4-5 p. m.
Dr. Kretschmer, Chicago Policlinic Hospital....4-5 p. m.

Dermatology—
Dr. William Allen Pusey, Cook County Hospital....2-3 p. m.

Neurology—
Dr. D'Orsay Hecht, Northwestern University Medical School..3 p. m.

TUESDAY, OCT. 15

Surgery—
Dr. Carl Beck, North Chicago Hospital....9-11 a. m.
Dr. D. N. Eisendrath, Michael Reese Hospital....9-11 a. m.
Dr. M. L. Harris, Alexian Brothers Hospital....8 a. m.
Dr. A. E. Halstead, St. Luke's Hospital....8-10 a. m.
Dr. D. D. Lewis, Presbyterian Hospital....11 a. m. to 1 p. m.
Dr. L. L. McArthur, Michael Reese Hospital ....9-11 a. m.
Dr. N. M. Percy, Augustana Hospital....8-11 a. m.
Dr. John L. Porter, West Side Hospital ....10 a. m. to 12 m.
Dr. W. E. Schroeder, Wesley Hospital....8-10 a. m.
Dr. Carl Wagner, Columbus Hospital....10 a. m.
Dr. C. I. Wynekoop, Lake View Hospital....10 a. m. to 12 m.

Medicine—
Dr. James B. Herrick, Presbyterian Hospital ....9-11 a. m.
Dr. E. C. Seufert, Cook County Hospital....11 a. m. to 1 p. m.
Dr. Arthur R. Elliott, Post-Graduate Hospital....3 p. m.
Dr. Goldsmith, Wesley Hospital....10-11 a. m.
Dr. S. R. Pietrowicz, Cook County Hospital....10 a. m. to 12 m.

Gynecology—
Dr. G. de Tarnowsky, Chicago Policlinic Hospital....3-4 p. m.
Dr. W. McI. Thompson, St. Joseph's Hospital....11 a. m.
Dr. A. B. Keyes, Chicago Policlinic Hospital....3 p. m.

Eye, Ear, Nose and Throat—
Dr. Charles H. Beard, Illinois Charitable Eye and Ear Infirmary .... 1:30-3:30 p. m.
Dr. Otto Freer, Chicago Policlinic Hospital.... 4-5 p. m.
Dr. Norval H. Pierce, St. Luke's Hospital....2:30 p. m.
Dr. John L. Porter, West Side Hospital....10 a. m. to 12 m.
Dr. John Edwin Rhodes, Rush Medical College....2-4 p. m.
Dr. Geo. F. Suker, Post-Graduate Hospital....9 a. m.

Rectal Diseases—
Dr. J. R. Pennington, Chicago Policlinic Hospital....2-3 p. m.

WEDNESDAY, OCTOBER 16

Surgery—
Dr. Carl Beck, Cook County Hospital ....1-4 p. m.
Dr. Charles Davison, University Hospital ....1-3 p. m.
Drs. W. M. Harsha and William Fuller, West Side Hospital. 1-3 p. m.
Dr. M. L. Harris, Alexian Brothers' Hospital....8 a. m.
Dr. John B. Murphy, Mercy Hospital....8:30 a. m. to 1 p. m.
Dr. A. J. Ochsner, Augustana Hospital....8 a. m. to 12 m.
Dr. John L. Porter, Home for Crippled Children
Dr. E. W. Ryerson, Children's Memorial Hospital....3:30-6 p. m.

Surgery, Continued—
Dr. A. J. Schoenberg, Ev. Deaconess Hospital.....8 a. m. to 12 m.
Dr. Carl Wagner, St. Joseph's Hospital.....10 a. m.
Dr. Gilbert Wynekoop, Lake View Hospital.....10 a. m. to 12 m.

Medicine—
Dr. Dyche, Wesley Hospital.....10-11 a. m.
Dr. Osgood, Wesley Hospital .....9-10 a. m.

Gynecology—
Dr. J. Clarence Webster, Presbyterian Hospital ..11 a. m. to 1 p. m.

Eye, Ear, Nose and Throat—
Dr. J. Holinger, St. Joseph's Hospital.....11 a. m.
Dr. Fred Menge, Wesley Hospital.....9-10 a. m.
Dr. Norval H. Pierce, Illinois Eye and Ear Infirmary.....2:30 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose and Throat Hospital ..2 p. m.
Dr. Geo. F. Suker, Post-Graduate Hospital.....2:30-5 p. m.

Pediatrics—
Dr. Isaac A. Abt, Michael Reese Hospital.....8-9 a. m.
Dr. John L. Porter, Home for Crippled Children.

Genito-Urinary—
Drs. Louis Schmidt and Kretschmer, Chicago Policlinic....4-5 p. m.

THURSDAY, OCTOBER 17

Surgery—
Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
Dr. F. A. Besley, Wesley Hospital.....5-6 p. m.
Dr. Arthur D. Bevan, Presbyterian Hospital.....9 a. m. to 1 p. m.
Dr. A. Goldspohn, Ev. Deaconess Hospital..... 9 a. m. to 12 m.
Dr. M. L. Harris, Alexian Brothers Hospital.....8 a. m.
Dr. M. L. Harris, Policlinic Hospital ..... 11 a. m.
Dr. A. E. Halstead, St. Luke's Hospital.....8-10 a. m.
Dr. A. B. Keyes, Cook County Hospital.....3 p. m.
Dr. John B. Murphy, Mercy Hospital.....10 a. m. to 12 m.
Dr. N. M. Percy, Augustana Hospital.....8-11 a. m.
Dr. John L. Porter, St. Luke's Hospital.....8:30-11 a. m.
Dr. Richter, Wesley Hospital ..... 4-6 p. m.
Dr. E. W. Ryerson, Home for Crippled Children..... 2-5 p. m.
Dr. D. A. K. Steele, University Hospital..... 1-3 p. m.
Dr. Alex. C. Wiener, West Side Hospital.....11 a. m. to 1 p. m.
Dr. Carl Wagner, St. Joseph's Hospital..... 10 a. m.
Dr. C. I. Wynekoop, Lake View Hospital..... 10 a. m. to 12 m.

Medicine—
Dr. Frank Billings, Presbyterian Hospital ..... 9-11 a. m.

Gynecology—
Dr. Henry Banga, Chicago Policlinic Hospital.....10-11 a. m.
Dr. Philip S. Doane, St. Joseph's Hospital.... 10:30 a. m. to 12 m.
Dr. Robert T. Gillmore, Wesley Hospital.....2-4 p. m.
Dr. Thomas J. Watkins, Wesley Hospital.....9 a. m.

Eye, Ear, Nose and Throat—
Dr. C. M. Robertson, Chicago Policlinic Hospital.....2-5 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose and Throat Hospital..3 p. m.
Dr. Wm. H. Wilder, Illinois Eye & Ear Infirmary
Drs. Casey A. Wood and Frank Allport, St. Luke's Hospital.2-4 p. m.
Dr. Thomas A. Woodruff, St. Luke's Hospital..... 2-4 p. m.

Rectal Diseases—
Dr. J. R. Pennington, Chicago Policlinic Hospital.....2-3 p. m.

Pediatrics—
Dr. Grabow, Chicago Policlinic Hospital.....3-4 p. m.

FRIDAY, OCTOBER 18

Surgery—

Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
Dr. Edward M. Brown, West Side Hospital.....1-3 p. m.
Dr. D. N. Eisendrath, Michael Reese Hospital.....9 a. m.
Dr. M. L. Harris, Alexian Brothers Hospital..... 8 a. m.
Dr. Allen B. Kanavel, Wesley Hospital..... 4 p. m.
Dr. L. L. McArthur, Michael Reese Hosptal.....9-11 a. m.
Dr. A. J. Ochsner, Augustana Hospital..... 8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....8:30-11 a. m.
Dr. E. W. Ryerson, Chicago Policlinic Hospital .....1-2 p. m.
Dr. W. E. Schroeder, Wesley Hospital.....8-10 a. m.
Dr. Carl Wagner, Columbus Hospital .....10 a. m.
Dr. Gilbert H. Wynekoop, Lake View Hospital.... 10 a. m. to 12 m.

Medicine—

Dr. James B. Herrick, Presbyterian Hospital.....9-11 a. m.
Dr. Arthur R. Elliott, Wesley Hospital.....8-10 a. m.
Dr. Arthur R. Elliott, Post-Graduate Hospital..... 3 p. m.
Dr. S. R. Pietrowicz, Cook County Hospital..... 10 a. m. to 12 m.

Gynecology—

Dr. G. de Tarnowsky, Chicago Policlinic Hospital.....3-4 p. m.
Dr. A. B. Keyes, Chicago Policlinic Hospital.....3 p. m.
Dr. W. McI. Thompson, St. Joseph's Hospital.....11 a. m.

Eye, Ear, Nose and Throat—

Dr. Otto Freer, Chicago Policlinic Hospital.....4-5 p. m.

Genito-Urinary Diseases—

Dr. Wm. T. Belfield, Rush Medical College.

Neurology—

Dr. A. H. Heym, Cook County Hospital..... 9-11 a. m.

SATURDAY, OCTOBER 19

Surgery—

Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
Dr. Arthur D. Bevan, Presbyterian Hospital.....9 a. m. to 12 m.
Drs. G. W. Green and Bussay, Ravenswood Hospital .....8 a. m.
Dr. M. L. Harris, Alexian Brothers' Hospital.....8 a. m.
Dr. John B. Murphy, Mercy Hospital.....9 a. m. to 1 p. m.
Dr. N. M. Percy, Augustana Hospital.....8 a. m. to 12 m.
Dr. Carl Wagner, St. Joseph's Hospital.....10 a. m.
Dr. C. I. Wynekoop, Lake View Hospital .....10 a. m. to 12 m.

Medicine—

Dr. Joseph M. Patton, Cook County Hospital.....9-10 a. m.

Gynecology—

Dr. J. Clarence Webster, Presbyterian Hospital...11 a. m. to 1 p. m.

Eye, Ear, Nose and Throat—

Dr. J. Holinger, St. Joseph's Hospital.....11 a. m.
Dr. Norval H. Pierce, Illinois Eye and Ear Infirmary....2:30 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose & Throat Hospital..2 p. m.
Dr. Geo. F. Suker, Post-Graduate Hospital.....2:30-5 p. m.

Pediatrics—

Dr. Isaac A. Abt, Michael Reese Hospital.....8-9 a. m.

Neurology—

Dr. D'Orsay Hecht, N. W. University Medical School.....2 p. m.

FRIDAY, OCTOBER 25

Surgery—

Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
Dr. Edward M. Brown, West Side Hospital.....1-3 p. m.
Dr. D. N. Eisendrath, Michael Reese Hospital.....9 a. m.
Dr. A. B. Kanavel, Wesley Hospital..... 4-5 p. m.
Dr. A. J. Ochsner, Augustana Hospital.....8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....8:30-11 a. m.
Dr. E. W. Ryerson, Chicago Policlinic Hospital.....1-2 p. m.
Dr. W. E. Schroeder, Wesley Hospital.....8-10 a. m.
Dr. Carl Wagner, Columbus Hospital.....10 a. m.
Dr. Gilbert H. Wynekoop, Lake View Hospital....10 a. m. to 12 m.

Medicine—

Dr. James B. Herrick, Presbyterian Hospital.....9-11 a. m.
Dr. H. A. Klein, Alexian Brothers' Hospital.....9-11 a. m.
Dr. Fenton B. Turck, Post-Graduate Hospital.....2-3 p. m.
Dr. S. R. Pietrowicz, Cook County Hospital.....10 a. m. to 12 m.
Dr. Arthur R. Elliott, Post-Graduate Hospital.....3 p. m.

Gynecology—

Dr. A. B. Keyes, Chicago Policlinic Hospital.....3 p. m.
Dr. W. McI. Thompson, St. Joseph's Hospital.....11 a. m.
Dr. Thomas J. Watkins, Wesley Hospital.....9 a. m.

Eye, Ear, Nose and Throat—

Dr. Otto Freer, Chicago Policlinic Hospital.....4-5 p. m.

Genito-Urinary Diseases—

Dr. Wm. T. Belfield, Rush Medical College.

Neurology—

Dr. D'Orsay Hecht, Michael Reese Hospital..... 2 p. m.
Dr. A. Heym, Cook County Hospital .....9-11 a. m.

SATURDAY, OCTOBER 26

Surgery—

Dr. Carl Beck, North Chicago Hospital.....9-11 a. m.
Dr. Arthur D. Bevan, Presbyterian Hospital .....9 a. m. to 12 m.
Dr. John B. Murphy, Mercy Hospital.....9 a. m. to 1 p. m.
Dr. N. M. Percy, Augustana Hospital.....8 a. m. to 12 m.
Dr. John L. Porter, St. Luke's Hospital.....8:30-11 a. m.
Dr. Carl Wagner, St. Joseph's Hospital.....10 a. m.
Dr. C. I. Wynekoop, Lake View Hospital.....10 a. m. to 12 m.

Medicine—

Dr. Joseph M. Patton, Cook County Hospital.....9-10 a. m.

Gynecology—

Dr. J. Clarence Webster, Presbyterian Hospital..11 a. m. to 1 p. m.

Eye, Ear, Nose and Throat—

Dr. J. H. Holinger, St. Joseph's Hospital.....11 a. m.
Dr. Norval H. Pierce, Illinois Eye and Ear Infirmary....2:30 p. m.
Dr. O. Tydings, Chicago Eye, Ear, Nose and Throat Hospital..2 p. m.
Dr. Geo. F. Suker, Post-Graduate Hospital.....2:30 p. m.

Pediatrics—

Dr. Isaac A. Abt, Michael Reese Hospital.....8-9 a. m.

The following institutions will have clinics every day, which are open to the members of the association during the hours indicated below:

Chicago Eye, Ear, Nose and Throat Hospital.....9 a. m. to 6 p. m.
Illinois Charitable Eye and Ear Infirmary .....2-4 p. m.
West Side Hospital .....9 a. m. to 4 p. m.

Chicago Policlinic Hospital ..... 9 a. m. to 6 p. m.
Augustana Hospital ..... 8 a. m. to 12 m.
Norwegian Deaconess Hospital ..... 9-11 a. m.
St. Mary's Nazareth Hospital ..... 8-11 a. m.

Dr. Patrick S. O'Donnell will give daily demonstrations in *x*-ray work at 1209 Heyworth Building, from 4 to 5 p. m.

The Chicago Maternity Hospital will give daily demonstrations in artificial feeding of infants and obstetrics from 10 a. m. to 1 p. m.

In the Children's Memorial Hospital there will be daily demonstrations of the treatment of diseases of children, infant-feeding and metabolism, from 2 to 5 p. m.

Dr. Joseph B. DeLee will send notice to headquarters should he have obstetric material for a clinic at any time in the Chicago Lying-In Hospital.

Physicians interested in the treatment of tuberculosis are invited to visit the Edwards Sanatorium, Naperville, Ill., which is under the direction of Dr. Theodore Sachs. Sunday train from Union station at 11 a. m., returning to Chicago at 6 p. m.

Special Article

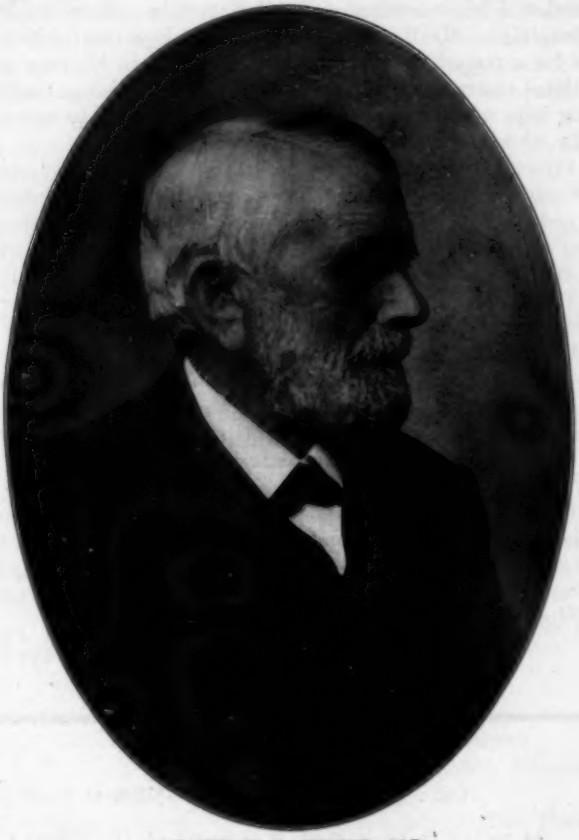
FRANKLIN R. PITNER, M.D.

In view of the one hundredth anniversary of Dr. Franklin R. Pitner, which occurs October 10th, and in response to a request of the editor of The Journal, I take pleasure in presenting a brief sketch of my venerable uncle. Dr. Pitner was the fourth son of Michael and Katherin (Rubel) Pitner, and was born in Wilson County, Tenn., near the Hermitage. He remembers seeing General Jackson several times at their home. His father enlisted in the war of 1812 and served under General Jackson at the battle of New Orleans.

The father of Michael Pitner was born in Germany, at Coblentz, on the Rhine, and with two brothers came to this country a few years before the Revolutionary War. They all served in the Continental Army throughout the war. The grandfather resided in Rockingham County, Virginia. Michael, soon after his marriage, removed first to Knoxville, Tenn., where his two oldest sons were born; afterwards went to Wilson County. He was the father of ten children, all of whom lived to advanced life.

Dr. Pitner came to Illinois in 1830, with his brother Montgomery, who had come five years prior, and entered land two miles east of Jacksonville. He attended McKendree College, and in 1832 began the study of medicine with Dr. Davenport at Salem, Ill. He attended medical lectures at Transylvania University, Lexington, Ky. After completing his medical course he located for practice in Maysville, Ill. (now Clay City). He was married in 1840 to Miss Sarah T. Ridgeway, granddaughter of Jacob Ridgeway, one of the leading merchants of Philadelphia.

Dr. Pitner was elected to the Illinois Legislature in 1844. After his term expired he settled in Jerseyville, Ill., where he practiced until 1850, when he joined a party of gold seekers and crossed the plains to California. The party was stricken with cholera en route. After exhausting work in caring for the many sick, the doctor himself became a victim to the dread disease. He prescribed for himself, and through the ministrations of a faithful friend he recovered and was able to look after others on the way.



FRANKLIN R. PITNER, M.D.

He remained in California two years. Returning he removed to his old home in Maysville, where he has resided ever since, excepting three years in Jacksonville, where the family went while the daughter (now Mrs. G. H. Huntley, Waterloo, Iowa) attended the woman's college. During this time he was associated in practice with the writer. Soon after returning to his home in Clay City he was called to mourn the loss of his devoted wife.

Dr. Pitner continued in the practice of medicine until he was 90 years of age, retaining remarkable vigor, both physical and mental. At that time he retired from active work and made a long visit to his son, John Lloyd, pastor of one of the principal Methodist churches in Los Angeles. Returning to Clay City he has since made his home with his youngest son, Charles, who, with his wife, have most faithfully and tenderly cared for him. He has had few of the infirmities of old age. But last January he fell and fractured the neck of the femur, which has not united and he is confined to his bed; yet he suffers but little and never complains. He has been a successful physician holding a good practice for a remarkably long period. Throughout his long career he has exhibited unusual activity and energy. He was always ready for the hard long trips which he was so frequently called upon to make, serving cheerfully all who sought his care.

Dr. Pitner has been for eighty-five years a devout active member of the Methodist church. At first pro-slavery, he became strongly anti-slavery and anti-saloon. For thirty years he used tobacco freely, then discarded it. He has been a man of strong conviction and outspoken for the right as he saw it, but considerate of others; maintaining the respect and friendship of his neighbors. He was always cheerful and genial, carrying sunshine and hope into the sick-room, imparting courage to the despondent. Dr. Pitner was especially happy in his home life, his wife possessing rare qualities with gentle spirit and strong character, and his children a constant joy to him. Two of his sons are very efficient ministers, another son a prominent dentist, and for several years president of the state board of dental examiners, and the other son a teacher, but now in business in Clay City.

Dr. Pitner was president several years of a district medical society in his section, and has always maintained honorable and cordial relations with his colleagues. He has lived long and lived well, and has honored his profession, which desires to express its appreciation and to honor him in his old age.

T. J. Pitner.

DR. FRANKLIN R. PITNER

As we go to press word is received of Dr. Pitner's death which occurred Sept. 29, twelve days before his one hundredth birthday.

Correspondence

UNREGISTERED PRACTITIONERS

Sept. 24, 1912.

To the Editor:—I wish to have your kind information in regard to a physician who located in our own town some four years ago, and who has been very active. He is, as the laity call it, a good mixer, but not so agreeable in the medical fraternity, and a few of the members have suffered from his unprofessional treatment. However, none of us have doubted his right to practice through the proper registration.

I have received from our efficient (?) state board of health secretary the Official Register of Legally Qualified Physicians, and that is the correct record as I understand it, kept at the state board's office. However, I cannot find this doctor's name; I then tried to find his name on record in the County Register, and cannot find him there.

Now, his name appears in our daily papers oftener than need be; his name is also in the A. M. A. Directory, and it appears to me that something may be wrong in this right of practice assumed by this doctor.

I will appreciate an early reply with information as to what plans to follow in this case.

Fraternally yours,

Pres. of the ——— County Med. Society.

AVOIDS DOUBLE-HEADER

To the Editor:—A lady residing in Moline came to Peoria recently to be confined. She stated that within a radius of three blocks during the past four months nine pairs of twins had been born.

M. S. Marcy.

Did she leave in time?—Ed.

6 Wadia A. Building
Government Gate Road, Parel, Bombay, India.

Illinois State Medical Society, U. S. A.

Sirs:—With reference to your advertisement in *New York Medical Journal*, I shall feel highly obliged to you if you will kindly forward to my above address a copy of your complete Syllabus with the list of necessary text-books.

Will you please let me know the lowest term for L.M.S. or M.B.,B.L. degree of any University who can take the examination in Bombay.

Thanking you in advance,

Yours faithfully,
Nassarwarye Dehunjelihoy.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The annual outing of the Adams County Medical Society was held Friday, August 23, at Camp Point, Ill. The attendance was very large and included besides the doctors many of their wives and friends, Miss Burt, the superintendent of Blessing Hospital, and Dr. Litchfield, physician at the Soldiers' Home, Quincy.

The important event of the day was the fried-chicken dinner. Everyone did justice to the good things prepared, and after the long drive the appetites needed no stimulation. The afternoon was taken up with the ball game, music, and a lecture by Euclid B. Rogers, of Springfield, Ill., on "The End of Education Not a Living But a Life." This was one of the most pleasant and successful outings held by the society for several years. Much praise is given to the committee who had charge of the arrangements, Drs. Grimes, Spence, A. D. Bates and J. H. Pittman.

September Meeting

The regular meeting of the Adams County Medical Society was held Monday, September 9, at the Chamber of Commerce rooms. President Pittman called the meeting to order at 11 a. m. The attendance was very large. Besides the members the society entertained five visiting physicians, namely: Dr. Alexander R. Craig, secretary American Medical Association, Chicago; Dr. Pence, member of Council, Chicago; Dr. C. E. Black, member of Council, Jacksonville; Dr. Percy, member of Council, Galesburg; Dr. E. W. Weis, secretary of Illinois State Medical Society, Ottawa.

After the reading of the minutes Dr. John Koch made report on three medico-legal cases. The first was the case of Mrs. Hermsmeyer, who is practicing in Quincy both as midwife and physician and has not a license for either. The state lost the case, but it has been appealed to the circuit court, and in all probability the state will win.

The second, that of L. G. Brown, a chiropractic, who was practicing in Quincy. The state won after hearing the testimony of a number of witnesses.

The third, that of S. M. Wells, a medical expert with the LaVita Drug Company. The state also won this case.

Luncheon was enjoyed at the Hotel Quincy.

The afternoon was spent in discussing the Miller case. Each one of the visiting physicians expressed his views. The point for discussion was: "What are the Present Relations of the Adams County Medical Society to the State Society, and What Will the Future Relations Be?"

After many opinions had been voiced and the subject thoroughly discussed the following resolution was read and adopted:

Resolved, That the Adams County Medical Society under protest accepts the report of the Council declaring Dr. Miller a member, and at the same time expresses its disapproval of Dr. Miller and declares him an unwelcome member.

Before the meeting closed it was moved, seconded and carried that the president appoint a committee of five to bring charges against our new member, Dr. J. E. Miller. Accordingly the committee was appointed. Adjourned.

BOND AND FAYETTE COUNTIES

The Medical Societies of Bond and Fayette counties met at Mulberry Grove Thursday, September 12, and held a joint session and picnic at Hudson Park. The meeting was a pronounced success and already the two societies have passed a motion to hold another joint session in September next year.

At the morning session, Dr. H. S. Crossen, Professor of Gynecology of Washington University, St. Louis, read a paper on "Gynecological Surgery in Nervous Patients." At noon the ladies served a bounteous dinner. At the afternoon session Dr. C. W. Lillie of East St. Louis addressed the physicians on the subject of "Organization of Illegal Practice." Following his talk, Dr. George S. Rainey of Salem gave an address on "The Home Beautiful," which was very interesting. At the afternoon session also, Miss Bernice Hutchinson of Mulberry Grove and Miss Ruth Freeman of St. Elmo gave readings which were much appreciated. Wm. Ingram entertained the doctors with reading of "Good-bye Brother Watkins" in plantation dialect. Those present were: Drs. J. H. Gordon and family, D. R. Wilkins and family of Pocahontas; Wm. T. Easly and son Charles, Dr. J. C. Wilson and wife, Dr. A. M. Keith and wife, and Dr. E. S. Clark and daughter of Greenville; Dr. H. S. Crossen of St. Louis; Drs. C. W. Lillie and H. G. Staunton and Mrs. Laura Brown of E. St. Louis; Dr. O. C. Church and family of Woburn; Dr. G. S. Rainey of Salem; Drs. W. E. Rose, L. L. Morey, and A. L. T. Williams of Vandalia; Drs. C. H. Eldridge, E. B. Pribble and wife, W. J. Whitefort and wife and Miss Ruth Freeman of St. Elmo; Drs. J. S. Poindexter and family, E. A. Glasgow and wife, D. T. Brown and wife, W. B. Hutchinson and Miss Bernice; and twenty other friends.

COOK COUNTY

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

Regular Meeting, May 21, 1912

A regular meeting was held May 21, 1912, with the president, Dr. Joseph C. Beck, in the chair.

Dr. George Paull Marquis demonstrated a tonsil forceps with movable handles which was intended to facilitate the introduction of the snare over the forceps.

DISCUSSION

Dr. Good thought it might be impossible to pass the snare over the tonsils.

Dr. Beck stated that one does not need a forceps in passing the snare over the tonsil; that a solid ring facilitates the passing of the loop over the tonsil.

Dr. Marquis has never used the solid ring.

Dr. Fletcher likes a snare which is small and uses the tonsil forceps with the teeth close together.

PRESENTATION OF SPECIMENS SHOWING TOPOGRAPHY OF MIDDLE EAR

JOHN A. CAVANAUGH, M.D.

SOME CURABLE AFFECTIONS OF THE ACOUSTIC NERVE

ALFRED LEWY, M.D.

Dr. Alfred Lewy describes a group of cases showing lessened hearing and shortened bone conduction, and which recover after appropriate treatment. There was no loss of either high or low tone limits except when associated with tubal obstruction, as some of them were. These showed in addition to shortened bone conduction a slight loss of the lower tone limit and improvement on inflation. He believes these cases to be due to anemia, nerve depression and possibly autointoxication, and calls attention to the sparseness of the literature on this subject. Several cases are described in detail.

He also describes disturbances of the acoustic nerve due to various drug intoxications and the toxemias of the infectious and constitutional diseases. He suggests that study of these cases may lead to the prevention of some of the numerous incurable cases of nerve degeneration.

DISCUSSION

Dr. Geo. E. Shambaugh in discussion stated that the paper discusses one of the most difficult problems in connection with diagnosis of ear diseases. The diagnosis of an ear case is rarely a simple problem, yet we are usually able to work out a more or less positive diagnosis of the conditions that present themselves, especially those which come under the head of the ordinary text-book conditions. There are no doubt a great many conditions which involve the labyrinth only temporarily. It is not at all uncommon in severe cases of otitis media to detect evidences of labyrinth involvement, such as marked defect for the higher notes and severe tinnitis, conditions which often subside with the recovery of the otitis media. Occasionally there are left permanent changes in the labyrinth. It does not seem impossible that with the milder forms of otitis media there may also occasionally be an involvement of the labyrinth. This may explain the first case in those reported by Dr. Lewy. In cases where the diagnosis seems quite clear of typical labyrinth deafness of a moderate degree, we often find a distinct increase in the deafness during an ordinary head cold and yet a careful examination fails to discover any tangible evidence of a middle ear involvement. In most cases where hearing is below par the patients will state that their difficulty in hearing is increased by physical or mental fatigue as well as by climatic conditions. When a person's hearing is so much impaired that he must constantly remain on the alert any slight decrease in hearing, such as may be brought on by fatigue, etc., is quickly appreciated.

Dr. J. Holinger congratulated Dr. Lewy on his careful work. He thinks, however, that the doctor is a little too sanguine, as he attributes too much of the hard hearing to nerve deafness. As long as there is a distinct improvement after inflation he can only attribute that part of the hard hearing which is left after repeated inflation to the nerve part of the ear. For example, the second case he mentioned is mainly a case of middle ear deafness or Eustachian catarrh. There may be some complication from the nerve part. The negative Schwabach (a′) points to this.

Amongst the cases of toxic deafness he wondered if Dr. Lewey came across labyrinth deafness due to nicotin. He had found that these cases are more frequent here than is thought and he was surprised to hear a cigar-maker state that in his shop nearly everyone employed was hard of hearing. He thinks it would be worth while to try and make a regular investigation of this form. He thinks that there is an explanation for the fact that nicotin deafness is more frequent here than in Europe. We know that in this country cigar-making is mostly a house industry, while in Europe it is mainly a factory industry. In factories all precautions are taken to aspirate the dust from the tables and to avoid the use of too much tobacco on the part of the employes. Here no precautions are taken and every cigar-maker smokes practically from morning to night. An investigation of these conditions would be interesting from more than one point of view.

Dr. Joseph C. Beck asked if the essayist came across the recently much discussed subject of neuritis or deafness following the injection of salvarsan. It has fallen to his lot to work out this subject recently and he found forty-seven cases in the literature of deafness, or, at least, deafness and associated irritation of the vestibular apparatus and other nerve affections following the use of salvarsan, and recovery following another injection or two or three injections of salvarsan, showing that it is an incomplete destruction of the spirochetes which are in the nerves themselves. By the first injection they are brought to a greater activity, producing a so-called Herxheimer reaction in the nerve sheath, and then by another injection they are destroyed and the nerve completely recovers. This is an extremely important subject. Thus far Dr. Beck has used salvarsan a great deal and has not come across a single case from his use of the drug. If any of the members had encountered this condition he thought it would be a good time to speak of the cases before the doctor closed the discussion.

Dr. Lewy (closing) thought that what Dr. Shambaugh said is true—that these cases are common in connection with any severe inflammation of the ear, when we are apt to have more or less involvement of the labyrinth, and two of the cases reported were associated with a middle ear affection of mild degree and bone conduction was shortened instead of lengthened. One, however, appeared to be a pure nerve deafness. Since writing the paper he had seen two trained nurses and had found the same reaction to the tuning-fork as reported. A blood examination was made and the hemoglobin found approximately normal in both cases; leukocytosis 2,000 in one; 2,000 and some hundred in another. These were simply fatigue cases.

In the part of the paper which he did not read reference was made to the toxic neuritis, and nicotin was mentioned. He found quite a few references in the literature to that particular form of poisoning, resulting in depression of hearing. He only found one case, published by Dr. Pierce some time ago, in which tuning-fork tests were definite—no loss of either upper or lower tone limit but shortened bone conduction.

His idea in bringing up this subject was that it might be that through a study of these so-called functional forms, or intermediate forms of labyrinthine trouble, we might be led to the prevention of those cases that come to us in the stage of degeneration, when we can no longer do anything for the patients.

With reference to salvarsan, he found quite a number of references to the supposed destructive effect on the acoustic nerve either of the salvarsan or of the spirochetes under the influence of the salvarsan. In those cases we must remember that arsenic is a well-known nerve poison, and is used by dentists in devitalizing pulps. So it is pretty hard to say whether or not the arsenic preparations destroy the nerve directly or simply excite the spirochetes to increased activity.

Dr. Lewy cited a case of syphilis in a man who had for years had a conduction deafness, who had been treated for a syphilitic eye lesion by immense doses of potassium iodid, and finally by an injection of salvarsan. Almost the next day he began to notice a very marked reduction in hearing, with quite violent tinnitus, and was for a week or more in great distress. He worried about loss of hearing, but after withdrawal of the iodid, which again followed the administration of the salvarsan, he improved in hearing somewhat. This man had had otitis media before he was ever treated for syphilis.

TRANSPLANTATION OF A PIECE OF CARTILAGE TO PREVENT PERFORATION AFTER SUBMUCOUS RESECTION

(Abstract)

Richard H. Brown, M.D.

Whenever in the case of septal operation holes or tears occur through the two membranes opposite each other, a straight piece of cartilage, the largest available, that has been removed from the front of the septum, is shaped into a splint and inserted between the two membranous flaps and held in position during healing. This serves as a temporary support during the healing of the membranes and is slowly absorbed, but lasts long enough to prevent the occurrence of perforation of the septum.

Seven cases are reported, six perfectly successful.

DISCUSSION

Dr. Chas. M. Robertson has not tried putting in loose pieces of cartilage but has tried, where there was a straight piece of cartilage, swinging a flap down into place but not taking the cartilage entirely out. In those cases the flap heals very kindly and the cartilage is left as it gets its nutrition from the part of the stump that is not cut off.

Dr. R. H. Brown (closing) said that it has been an extremely easy method of preventing what would have been severe perforations in the seven cases reported. He has a case in prospect that he is anxious to operate on and had hoped that the patient would have it done before he read his paper. This is a case where some doctor, in operating, has left quite a large perforation, without remedying the

defect of the septum at all. It was simply hacked through in an endeavor to do something that he did not understand, and a perforation large enough to admit the little finger is present. It is an extremely serious deflection, with very marked interference with breathing. He contemplated in this case simply going in and, disregarding entirely this perforation, peeling up his flaps just as before, being very careful to save as large a piece of reasonably straight cartilage as possible, and, after finishing everything, put it in place and stitch down the mucous membrane on each side. He believes the operation will be successful.

PRIMARY TUBERCULOSIS OF THE MIDDLE EAR

Charles H. Long, M.D.

The case reported was that of a healthy child, female, 11 months of age, who had suffered ten months from a discharge of the ear. Examination proved the presence of tubercle bacilli in the discharge. The radical operation was performed, which was followed by a perfect recovery.

Conclusion that the disease was a primary infection:

1. Age of child at period of onset.
2. No other tubercular focus.
3. No tubercular diathesis.

The probable avenue of inception of the disease was the Eustachian tube, and the case being a surgical one suggested the bacillus of bovine type.

DISCUSSION

Dr. L. N. Grosvenor asked Dr. Long if a pathologic examination had been made of the adenoids and if they showed anything. In his pathologic examination of many adenoids he has found only one, removed from a little fellow who was failing rapidly, in which the adenoids showed typical tubercular giant cells pathologically. No bacteriologic examination was made. But on removal of these adenoids the little fellow picked up and has been remarkably well ever since.

Dr. H. Kahn did not suppose this disease was so rare. Although his experience has been rather limited he knows of two cases which he thinks were primary tuberculosis of the ear. One was in a laboratory worker—a pathologist or bacteriologist—who worked with tubercle bacilli and other organisms. He noticed a painless discharge from his ear without any other disturbance. He injected some of the pus from his ear into a guinea-pig and also inoculated it into the eye of a rabbit. In both animals tuberculosis developed; the guinea-pig died and a typical tubercle developed in the eye of the rabbit. This man left this climate, went to California, and is now well.

Another case, a man aged 20 or 25 years, developed an otitis media which began in about the same way, but his ear became secondarily infected and he had an acute otitis media on top of his possible tubercular infection. He is in Denver now and when last heard from, about three months ago, said he was cured.

These two cases seem to controvert the opinion that this disease is a disease of childhood. It seems as though it can occur at any age. Both of these cases occurred in adults.

Dr. Geo. E. Shambaugh in discussion stated that primary tuberculosis in the ear, just as in the nasal chambers, is quite unusual. In the treatment of such lesions one must not lose sight of the fact that foci of tuberculosis located in the ear may respond to the same general treatment which affect lesions in the other parts of the body. Our first impulse in cases of primary tuberculosis in the ear, as in the nose, would be, if possible, to remove this surgically. Yet surgical interference is not always advisable. In these cases one should give the patient the benefit of the same treatment we would institute for incipient lung tuberculosis.

Dr. Shambaugh cited a case of a young child less than two years of age, who suffered from primary tuberculosis of the middle ear with an involvement of the glands of the neck. The diagnosis was based on the clinical history and the microscopic findings of tissue removed from the middle ear. The child's general condi-

tion was good and by removing repeatedly the granulations as they formed in the tympanum the middle ear trouble finally subsided, when the enlarged glands of the neck were also removed.

Dr. Chas. M. Robertson thought there was no question regarding the diagnosis of primary tuberculosis of the ear in the case cited by Dr. Long, because the child was not old enough to have the disease elsewhere, unless it was a hereditary tuberculosis. In nearly all the cases of tuberculosis of the ear which he had seen he had never been satisfied that it was a primary tuberculosis, because he could not examine all the tissues of the body. There may be a small focus of tuberculosis in some remote portion of the body, in the joints or in the mesentery, or some place that is inaccessible.

His experience with tuberculosis of the ear is about the same as Dr. Long's—that it is a severe disease tending to destruction of tissue, and in those cases in which the case is allowed to go unabated there is nothing to expect but further destruction. He has seen cases of tuberculosis of the ear that were probably secondary and were very slight in degree, which get well of themselves, but the majority of the cases go to the bad.

Dr. Joseph C. Beck reported a case of tuberculosis of the ear in a girl aged 12 years, who had a chronic suppuration for a number of years, in which the culture was negative as to tuberculosis. He did a radical mastoid. She had had previously a simple mastoid for this condition and the suppuration continued, so he did a radical mastoid, examined the bone chips, and has some beautiful specimens of bone tuberculosis. This case recovered after the radical mastoid. It would have added to Dr. Long's case had he examined the granulations and the mastoid bone chips removed for tuberculosis.

Dr. G. W. Boot said that in Siebenmann's clinic in Basel he was told that they found a surprising number of their mastoid cases to be tubercular—something like 30 per cent. of the cases in children, as he remembered it. He asked them how they made the diagnosis and was told that it was made by microscopic examination of the decalcified bone chips removed at operation.

Dr. J. Holinger has at present under his care a parallel case to the one reported by Dr. Long. The child was born shortly after New Year. Delivery was with forceps and the mother died soon after the birth of the child. The forceps was laid over the one ear and mastoid. Following this, there was a swelling over the site where the forceps had been used, extending down into the neck and around the mastoid process. This swelling became quite large. At the same time a very free discharge from the ear set in and the child was seen by Dr. Holinger for the first time when it was about three months old. He at first thought it was an ordinary suppurating otitis media but there was no result from careful treatment. One day when the child began to cry he noticed a facial paralysis of that side, so it was evident that the process had made progress, and he operated. He cleaned out the wound as completely as possible. He could not find any granulations in the antrum and there was no indication to go down to the attic, but the parts behind the insertion of the mastoid muscle were removed because there was quite a good deal of necrotic tissue. Recovery is extremely slow. Now, after about eight weeks the glands on the neck are still swollen and a piece of bone is still white and free from granulations. There is no question but that the process is tubercular. In Dr. Long's case, as in Dr. Holinger's, the ears seemed to be the primary foci but in Dr. Holinger's the glands of the neck were affected very early and there is a history of traumatism.

Dr. Norval H. Pierce thinks we should recognize the fact that there are two well defined forms of tuberculosis that affect the ear—whether primary or secondary is of very little importance. The probability is that an ear with tuberculosis, notwithstanding the fact that we do not recognize other foci of infection, is practically always secondary; either secondary to tuberculosis of the tonsils or to lymphoid structures in the throat. However, that is of very little importance. The most important point, he thinks, is that we have two well defined forms of tuberculosis of the ear: one, described by Bezold, a fibroid exudate on the mucosa, which shows very little tendency to invade bone but which shows abundance of

tubercle bacilli and runs its whole course as a very mild form of inflammation, hardly to be differentiated from the ordinary catarrhal type, so-called; and the other, in which there is immediately an extensive invasion of the bone. Those are the two extremes of this process and we may have mixtures all the way in between; types where it begins in the mucosa and runs for a long time apparently in the mucosa, the muco-periosteum, and then invades the bone. In the former type we can find numerous tubercle bacilli in the exudate and mucosa. If we scrape deeper we find the giant cells and the tubercles, but this form heals up readily in the majority of cases by local treatment with a mixture of boric acid and iodoform packed into the ear, not blown into the ear, but the external auditory canal tamped full of this powder.

The other form, in which there is a tendency more or less to invade the bone, cannot be cured by local applications. It cannot be cured in any other way than by thorough removal by radical operation, and it is the part of the clinician to determine with which of these types he has to do and when that is determined the therapy is easily carried on.

It is no longer believed that giant cells constitute a pathognomonic sign of tuberculosis. The most trustworthy differential point is the identification of the tubercle bacillus in the tissue itself. If scrapings injected into the anterior chamber of a guinea-pig's eye produce tuberculosis there is strong probability of the tubercular character of the process. This, however, does not throw out the possibility of the accidental presence of tubercle bacilli in the discharge. In some forms, therefore, it is very difficult to differentiate whether we have a simple inflammation or a pure tuberculosis. The point he wished to make is especially that there are these two forms of tuberculosis as it affects the ear, one calling for very simple remedies, and which has a very good prognosis, and the other form, the bone form, which calls for radical measures.

Dr. J. Holinger wished to add that there is a third form of tuberculosis of the middle ear, according to Bezold. It is the tuberculosis of the ear in old consumptives, in the last stages of the disease. The tissue of the middle ear just breaks down extensively. In these cases there is very great destruction of part of the middle ear and of the labyrinth within say two to three weeks, but they usually end with the death of the patient, as these cases are only observed in the last stages of tuberculosis of the lungs.

Dr. Norval H. Pierce said that he included the third class referred to by Dr. Holinger under the second class, which he thinks is better—the bone tuberculosis in contradistinction to the mucous membrane forms of the disease.

Dr. Chas. H. Long (closing) wished to add that at the time his patient came under observation he was not aware that primary tuberculosis was such a rare disease and thus failed to take advantage of other ways of clinching a more certain diagnosis of primary tuberculosis. After the operation was performed he commenced to look up the literature and found that it is really very rare. So he sent out a list of six questions relating to the present status of primary tuberculosis of the ear to ten of the most noted otologists in the country, among them Dr. Clarence Blake of Boston, who replied, stating "that he was unable to answer satisfactorily to himself or to me the questions, because of the lack of classified data." Whether the tuberculosis in this case was a true bone tuberculosis, one of the mucous membrane, or an accidental one, it would be impossible to say positively, but there was destruction of the malleus and incus and the condition of the ear wound afterwards was very indicative of the healing of tubercular wounds in general.

Answering the question regarding adenoids, he was not aware that he had a case of tuberculosis at that time.

He only had one smear made, and should have had the tuberculin test before operating, but they were not in as good position at that time to make tuberculin tests as later on.

He thought his case was one of the mucous membrane group, referred to by Dr. Pierce, but there did not seem to be any tubercular involvement of the mastoid cells.

The length of time that this case had gone on without any material improvement seemed to be sufficient indication for a radical operation.

As to whether it was a primary case or not, as Dr. Robertson said, that is a very difficult thing to state. We may have a tubercular focus anywhere in the body, especially in the mediastinal glands, which has taken place very early in life, because it is stated that 97 per cent. of human beings have been infected with tuberculosis some time in their lives, so that it is very difficult to say in any of these cases that it is really primary, but this child being so young it did not seem possible that it could be a secondary infection.

CHICAGO OPHTHALMOLOGICAL SOCIETY

Regular Meeting, Feb. 19, 1912

A regular meeting was held Feb. 19, 1912, with the president, Dr. Thomas Faith, in the chair. The following program was presented:

A CASE OF ORBITAL DERMOID

Dr. George F. Suker presented a case of orbital dermoid in a baby, aged four months, whose mother had noticed a few days after its birth a small pin-point elevation on the upper right brow at the angle. A physician lanced it; it evacuated itself; filled again, and was again lanced fourteen days afterward. Dr. Suker saw the baby at this time at the request of Dr. Hultgen. On probing, he found a sinus leading downward toward the external orbital angle and then passing along the upper lid toward the internal canthus. He removed several hairs from the depth of the tract. He laid the sinus open, retracted the upper portion of the lid, and worked subcutaneously toward the inner canthus, removing a large, dense, firm cicatricial, sac-like tumor, filled with caseous material and some hard substance. He then passed the probe backward toward the sphenoidal fissure, outlining some more tumor mass and cleared out the tract. The tumor had penetrated the levator palpebrus muscle, destroyed the superior and external recti and the oblique muscles. All went well for about three weeks, when a swelling again appeared and a discharge came from a sinus in the upper retro-tarsal fold. He made the second incision directly over the eyebrow, extending from angle to angle, retracted the upper lid downward and laid bare the orbital wall above, going back to the sphenoid fissure and taking out everything except the nerve. He found one or two small sacs which contained dermoid material. He excised the retro-tarsal sinus; did not irrigate or pack the wound, but closed it. The tumor involved the lacrimal gland, it also was removed. The globe is fixed downward. The iris reacts to light, and the nerve-head is intact. The wound is still discharging and further procedures are under consideration.

Microscopic sections of the mass made by Dr. Hultgen disclose cartilage, sweat and sebaceous glands, and hair follicles. The question is, is it a dermoid or a teratoid? The tumor had worked itself through the periosteum and began to erode the orbital wall at several points.

DISCUSSION

Dr. Thomas faith suggested that if the discharging sinus did not contain bacteria, it might be well to fill it with bismuth paste, providing its limits are known and that the paste would not press on the optic nerve.

A CASE OF RUPTURE OF SCLERA

Dr. M. H. Lebensohn presented a man, aged 58 years, who slipped while shoveling coal, striking the lower eyelid of the left eye on the edge of the coal car. He became blind at once, and there was much discoloration of the eyelids, but no swelling except a protrusion on globe at upper and inner limbus. The protruding mass was clear, but its contents could not be determined. From the shape and firmness it looked like the lens and vitreous. The only treatment instituted was a pressure bandage and strict antiseptic measures. Enucleation is indicated, as vision is absent. Patient does not complain of pain.

PENETRATING WOUND OF SCLERA

Dr. M. H. Lebensohn presented a boy, aged 8 years, who was stabbed in the right eye with a knife on January 23. The knife entered the upper lid and passed downward into the sclera, the vitreous protruding from the wound. Vision was *nil*. A pressure bandage was applied for three or four days, and when there was no evidence of infection the wound in the sclera was sutured. It healed promptly and vision is now fingers at three feet. The fundus shows where the knife passed through. There are opacities in the lens.

A CASE OF SUB-HYALOID HEMORRHAGE

Dr. H. W. Woodruff reported a case of sub-hyaloid hemorrhage. The following is the report of a case seen by Dr. H. W. Woodruff in consultation with Dr. A. W. Lloyd of Hammond, Indiana. The history, as taken by Dr. Lloyd, is as follows:

"Patient, Mr. S. T., aged 38 years, policeman, was first examined Jan. 15, 1912. Two days before, about 11 a. m., while shaving he noticed he was blind in the right eye. Subjective symptoms other than the loss of vision were absent. An ophthalmoscopic examination showed a large hemorrhage circular in outline in the macular region with well defined edges except at the temporal margin where it gradually faded off into the surrounding fundus. On the opposite side the hemorrhage covered a small portion of the disc and in this situation the line of demarkation was particularly well marked. He could see a light at 10 in., the light appearing red. No history of lues or other infectious diseases or of the cardiovascular system. Urinalysis and tuberculin tests negative. The patient was treated for a time by rest in bed with hot applications, potassium iodid and mag. sulph. A gradual improvement took place until now the patient can count fingers at 1 foot."

The interest in these peculiar effusions centers around their rarity, the sudden and complete loss of central vision and the possibility of complete absorption with no damage to retina or vitreous. Hotz writing in 1893 reports three cases. That being the number he had seen in 20 years of practice. All of them recovered normal vision. The cause of one was ascribed to menstrual disorder. Another to a cough and the third could not be explained. One patient died from apoplexy one year later. Dr. Hotz also referred to cases reported by Dr. Haab in which the hemorrhage was in one case on the nasal side of the disc, in another below the disc. The majority of them, however, were in the macular region.

DISCUSSION

Dr. Oscar Dodd said he had a similar case occurring in a young lady, about twenty, after the ingestion of santonin for vermifuge purposes. Similar cases have been recorded in the literature. In this case there was a large hemorrhage involving the same area as in Dr. Woodruff's case, and vision was restored practically to normal.

Dr. Thomas Faith cited the case of a man who was injured in one eye a year ago, and had what he at first considered a subhyaloid hemorrhage. The patient had an absolute blind spot, but after several weeks the shape of the hemorrhage did not change by gravity, as is the case with subhyaloid hemorrhage. The eyeball was not ruptured and from external appearances, was not injured. After a month the hemorrhage began to absorb around the margins. Later there appeared a little dark outline in the chorioid. After the hemorrhage had been completely absorbed it showed that there had been an injury which ruptured one of the chorioidal vessels, and the hemorrhage ensued, which from its location made it impossible to see whether any retinal vessels had been ruptured. There was a complete coloboma in the chorioid, with rupture and a tear across one of the large veins.

Dr. E. J. Gardiner said that Dr. Woodruff need not be discouraged about the "slowness in clearing up," and stated that three or four years ago he had seen a much more extensive subhyaloid hemorrhage, producing nearly complete blindness, clear up after a year and a half. When the patient was last seen, all but the lower portion of the hemorrhage had disappeared. Unfortunately the tissues in the macular region had been so much affected that there was central blindness. The

patient was 63 years old. He thought that Dr. Woodruff would be justified in giving a relatively favorable prognosis in his case.

Dr. O. Tydings said that several years ago he had a patient, over 70 years old, who had such a hemorrhage. There was little vision in the eye at the time. Subsequently the condition cleared up entirely, but vision was lost.

Dr. David Fiske cited the case of a boy, aged 14 years, who, in September, 1911, suddenly lost sight in his right eye. Vision had previously been normal, except for half a diopter of hypermetropia. There was no history of trauma. The boy was riding on the platform when suddenly vision in his right eye failed. On examination there was found a large hemorrhage in the region of the macula, with no vision, except for light and hand motion. Vision is much better now, and the hemorrhage is pretty well cleared up. The vitreous is somewhat cloudy, with opacities.

Dr. H. W. Woodruff in closing the discussion said that cases of this kind were comparatively rare. The prognosis, he said, was generally favorable, although in his case the condition is not clearing up as rapidly as it is usually said to do. The hemorrhage has cleared up somewhat and vision has improved, but even after a month absorption is far from being complete.

A CASE OF INTERSTITIAL KERATITIS

Dr. Mortimer Frank reported the case of a young man whom he first saw in September, because of a typical interstitial keratitis. The patient had syphilis five years before; a Wassermann was positive. He was given mixed treatment, and in six weeks the cornea began to clear up. At present there are only a few opacities in the center of the cornea. The two central incisors are slightly notched. There is no erosion of the dentin.

DISCUSSION

Dr. E. V. L. Brown suggested that a Wassermann test be made of the patient's father and mother, because in spite of the history the keratitis might be a congenital condition.

Dr. Thomas Faith thought these cases nearly all congenital. He has never seen but two or three acquired cases of interstitial keratitis.

Dr. H. W. Woodruff also regarded it as a case of congenital interstitial keratitis, and would not consider the Wassermann reaction or the history, because he thought the patient's facies indicated an inherited disease. The teeth and the angles of the mouth, he thought, were characteristic of inherited syphilis.

Dr. Oscar Dodd would not disregard the possibility of acquired syphilitic interstitial keratitis, because he has seen two cases, before the Wassermann test was in use, in which there were absolutely no signs of hereditary syphilis, but the history of acquired syphilis was positive. These cases, he said, are not similar in appearance to the ordinary cases of interstitial keratitis. They are apt not to begin at the periphery, extending inward, but begin in spots. Dr. Loring, he said, presented two patients to the society some years ago who gave the same history. They also were different in appearance and cleared up under treatment.

Dr. George F. Suker looked up the literature of the subject not long ago, and failed to find a single case reported in which there were not some of the characteristic markings in the teeth. If any teeth show these markings, the permanent teeth are the ones. It is not necessary to have the incisors marked; in fact, the molars are more apt to show a characteristic marking. Instead of having the four cusps covered by enamel, the enamel is absent and the surface of the tooth shows dentin pegs, which in time are ground flat. Where the cusps should be the dentin proliferates. These are the so-called Fournier teeth. It is not necessary to have peg teeth or separated teeth or notched teeth to determine the question of inherited syphilis. The markings of the first permanent molar are always present. In no case of interstitial keratitis which he has seen were they absent.

Dr. H. S. Gradle suggested that the luetin reaction of Noguchi might prove of value in this case. It is negative in the primary and early secondary stages, but is positive in the late secondary and tertiary stage in from 75 to 80 per cent. of cases.

Dr. Mortimer Frank in closing the discussion stated that inasmuch as the young man had the initial lesion of syphilis and the keratitis followed, he considered it very likely a case of acquired and not congenital syphilis.

A CASE OF EPITHELIOMA OF THE LID

Dr. Oscar Dodd presented a patient who had epithelioma of the lower lid, which he removed, securing very good results. The tumor involved about one-third of the lid, and was about one centimeter in depth. He removed the lid for about twelve millimeters lengthwise and three or four millimeters sideways; loosened the conjunctiva and removed a "V"-shaped piece of skin. He then made an incision in the skin from the external canthus of the eye, cut the tendon of the lid, brought the temporal part of lid over, and sutured it, making a skin flap to cover the defect. The lid at the present time is soft and pliable, and acts as well as before.

DISCUSSION

Dr. George F. Suker referred to a case of melanosarcoma of the lower lid in a child, aged 8 years. He did the same operation, but in order not to have the upper lid drop down over the nap angle, he fixed the edge directly into the external canthal wound. He believes that the sliding operation gives a much better result than any other.

Dr. Oscar Dodd in closing the discussion said that he had failed to find any description of the operation he had carried out in any of the text books.

A CASE OF TUBERCLE OF THE CHORIOID

Dr. Charles C. Clement (by invitation) presented a patient, a male, aged 17 years, Swedish descent, stenographer, who came to the Illinois Charitable Eye and Ear Infirmary about five months ago complaining of failing vision in the right eye of about three weeks duration. Family and childhood history negative. No recent temperature, cough or loss of weight. No specific history. The present trouble came on insidiously and without pain, failing vision being the only symptom. At the time of admission it was 20/70 R. E. and 20/20 in L. E.

In the affected eye there was slight dilatation of the pupil, normal tension, slightly deepened anterior chamber, cloudiness of the aqueous, very slight pericorneal injection, and a precipitate of fine dots on the posterior surface of the cornea. Opacities in the vitreous somewhat obscured the details of the fundus but a round yellowish-white spot somewhat smaller than the disc could be seen situated above the disc and to the temporal side, at about 11 o'clock. It appeared to be slightly elevated and at that time its borders shaded gradually into the surrounding fundus. Since that time degenerative changes have evidently taken place and a rose-colored border has appeared around the lesion. Urinalysis was negative. Wassermann test was not made. Von Pirquet cutaneous test was positive. Subcutaneous test with old tuberculin was positive. He has been given gradually increasing doses of tuberculin T. R. under which he has shown slow but constant improvement. The cornea and vitreous have cleared to a considerable extent, his vision now being 20/40 in the affected eye. He was recently examined at the Rush Medical College and no evidence of tuberculosis, other than that in his eye, was detected.

DISCUSSION

Dr. Mortimer Frank had seen quite a number of cases of tubercle of the chorioid, because of the large number of children with tubercular meningitis who are brought to the Michael Reese Hospital. Unfortunately, these children were not seen by him until shortly before death, because the ophthalmologist is not called in until death is imminent. He has seen one case in a man aged 18 years

which terminated fatally. In all the cases the tubercle bacillus is found in the spinal fluid, and he thinks that the bacilli should be looked for in all cases, especially if they are known to be cases of tubercular meningitis.

Dr. Oscar Dodd, whose patient Dr. Clement reported, said that the man had been receiving progressive doses of tuberculin and that there is considerable improvement in his condition. He called attention to two kinds of tubercular chorioiditis, one kind occurring in cases of miliary tuberculosis, where the presence of tubercles in the chorioid are a sign of approaching death. The cases of solitary tubercles are more rare, and usually go on to complete healing. Usually there are no other symptoms of tuberculosis to be found. A positive tuberculin reaction is obtained, however. The patient recovers, although sometimes vision is affected. In one of his cases the tubercle was in the macular region, and central vision was destroyed.

Dr. Thomas Faith asked whether there was any change in the acuity of vision after the tuberculin test?

Dr. Charles C. Clement in closing the discussion stated there seemed to be no local reaction to the tuberculin given for diagnosis. These cases, he thought, are more common than is usually supposed. They ordinarily escape observation because they usually appear as terminal manifestations of general miliary tuberculosis in which any eye symptoms are so overshadowed by the grave general condition an oculist is not consulted and even if he should be called the tubercles may be situated so peripherally as to escape observation with the ophthalmoscope and be found only at the post-mortem.

A SPECIAL FORM OF PROLIFERATING CHORIOIDITIS

Dr. E. V. L. Brown reported a special form of proliferating chorioiditis occurring in a man aged 58 years, who was struck in the right eye thirty-five years previously by molten metal and had been blind ever since. The eye was removed for secondary glaucoma following eight weeks of severe pain. The fellow eye has never been inflamed.

The sections show a round, epithelioid and giant cell infiltration in the chorioidea; the veins are thrombosed and plugged with cells and most of them completely destroyed. Older areas are almost exclusively made up of epithelioid cell proliferation. No new vessels are found. This infiltration extends over the edge of the disc into and fills up a deep glaucomatous excavation, goes through the lamina cribrosa and forms a large retrolamellar round-cell node. This node invades and fills the trunk of the central vein. The disc is swollen far forward. The cells also invade the retina near the disc. Some obliterative endovasculitis of the retinal vessels is present. The anterior part of the eye shows a recent organized plastic uveitis and a very recent suppurative endophthalmitis. Huge areas of chorioidal pigment epithelial cell proliferation are found in front of the equator.

The unusual feature of the case is a necrosis of the infiltration in the chorioidea, often in all layers, anterior to the equator, and of the adjacent Dahlen epithelial nodes which, of course, depend upon the chorioidea for nutrition; the tissues over the disc are also necrotic.

The writer holds the condition is not sympathetic infiltration because 1, the other eye was not involved, 2, the enucleated eye was never penetrated, 3, necrosis of the infiltration is present.

The process does not in any way closely resemble tuberculosis or syphilis, and stains for organisms are negative.

A very similar case has been reported by Fuchs (Arch. f. Oph., page 437) but this eye had been opened and the other eye was not inflamed. Fuchs held the condition to be a peculiar form of proliferating chorioiditis about which nothing further is known than that it is a finding similar to sympathetic infiltration but with necrosis. The present case emphasizes the great tendency to invade and thrombose the veins, and shows that it can occur without penetrating injury.

Richard J. Tivnen, Secretary.

HYDROTHERAPY IN ACUTE OTITIS MEDIA

HENRY F. LANGHORST
ELMHURST

Having had success with a hydrotherapeutic procedure, in the treatment of acute otitis media, I wish to report a few cases in which this method was applied.

Mrs. U., after a slight cold, contracted a few days before, there appeared a severe pain in the ear. This pain was severe and throbbing with slight chill, headache, muscular soreness and fever. Examination: pulse 90, temperature 99.5. Speculum revealed diffuse redness of the membrane. No discharge from the nose. Some tenderness between the angle of the jaw and the edge of the sterno-mastoid muscle; just beneath the mastoid process.

The nurse was instructed to irrigate the ear continuously with a hot normal salt solution by means of a fountain syringe. The bag was elevated sufficiently to insure a gentle flow from the nozzle. The heat was applied in this manner, continuously for two hours and intermittently the next two days. The effect was markedly anodyne. After this procedure had been operative about four hours another examination was made and the membrane was bulging. It was predicted that a rupture would, undoubtedly, take place during the night. During the night, when the irrigations were not operative, a strip of gauze, saturated with a solution of aluminum acetate, was inserted into the external auditory canal. Over this was placed a hot moist pack and an occlusive dressing applied. The patient had a comfortable night. On examination the membrane was found intact; the bulging was less and there was a shriveled appearance to the ear drum. Temperature was 99. Other symptoms improved. In the evening, the patient noticed a bloody discharge from the nostril of the same side. That evening the temperature abated and patient was comfortable. The bloody discharge continued for a few days. The hearing was obtunded for another week and after this the patient was normal.

Wm. W., aged 12 years. His attack of earache followed or complicated an attack of influenza. Symptoms: Chills, sore throat, fever, cough and coryza. On the fourth day when he was in great pain with earache he came under observation. His pain was intense, he would run back and forth in the room, crying out aloud. He had the adenoid facies, enlarged glands and a muco-purulent discharge from the nose. Temperature 101. Tenderness beneath the mastoid and on elevating the ear. The speculum revealed a very much reddened tympanic membrane. The treatment was substantially the same as in the former case. In addition to this tincture of aconite, urotropin and calomel were prescribed. The pain yielded to the irrigations, but persisted for two more days. On the third day, the patient noticed blood in the discharge from the nose. Patient felt well but had a recrudescense in a week's time; this responded to similar treatment, however.

In all, six cases were treated along similar lines, with the result of an intact membrane and a drainage through the Eustachian tube.

The heat, evidently, reinforces the membrane sufficiently to prevent necrosis of same. This is caused either by the constringing effect of the heat or by the increased activity of the leukocytes.

This treatment maintains the integrity of the tympanic membrane, prevents suppuration with its trail of complications and greatly ameliorates the suffering.

THE FOX RIVER VALLEY AND AUX PLAINES MEDICAL SOCIETIES

The joint picnic of the Fox River Valley Medical Society and the Aux Plaines Branch of the Chicago Medical Society was held at Mill Creek Park, Aug. 28, 1912. The attendance was one of the largest ever known in the history of the society meetings, and many went to enjoy the beauties of the park and to hear the scientific program held in the afternoon following the picnic luncheon.

Papers were read by Drs. Thomas Motter of Oak Park, James W. Vanderslice of Oak Park, Emil Windmuller of Woodstock, A. R. Reder of Aurora, and A. F. Krueger of Chicago. The discussions which followed the reading of these papers were led by Dr. E. H. Abbott of Elgin, Dr. C. E. Hamilton of Austin, Dr. W. F. Scott of Melrose Park, Dr. George Haan and Dr. J. W. Macdonald of Aurora.

IROQUOIS AND FORD COUNTY MEDICAL SOCIETIES

The Iroquois and Ford County Medical Societies gave a banquet on Tuesday, September 3, at Gilman, to Dr. T. N. Boue of Loda, the oldest physician in Iroquois County. A loving cup was presented in an address by Dr. S. N. Wylie, of Paxton. Dr. Boue is treating the fourth and fifth generations since his advent into professional life, and has seen many remarkable changes in the character of medical practice.

LAKE COUNTY

Our meeting held at Wauconda September 10 was very interesting and enjoyable. About half a dozen members arrived early and as it was then too warm for ball-playing, an hour or longer was spent in several good games of checkers in which Wauconda and Waukegan shared the honors, and Highland Park took the rest. Another hour or two was spent in batting, so-called fielding and the ancient game of "One Old Cat" and then enough men having arrived, sides were chosen and a very exciting game followed resulting in victory for one side or the other by a score of about 12 to 6. Some of the special features of this game were the marvelous base stealing by Foley in which, following his well known habit of removing gall-stones, appendices and various articles belonging to others, he proceeded to remove every base that he came to and if not watched, would probably have brought them home. Fuller did some phenomenal catching, assisted by Ludwig as backstop, the latter not being obliged to chase more than nine out of every ten balls pitched. The batting was simply terrific, especially that of Gavin and Roberts of Waukegan, who actually hit the ball after about nineteen strikes. Brown acted as coach for both sides with general satisfaction to himself. Knight played a brilliant fielding game until a ball was knocked in his direction when he climbed over the fence and took refuge in his auto. After the game we were all ready for the bounteous repast of fried chicken, ham, beans, salad, pie, cake and other dainties suited to our very delicate appetites and digestive powers. Here also, Brown and Knight especially distinguished themselves by a marvellous display of gastronomic energy and endurance after their strenuous efforts upon the ball field.

Following supper we went to the Methodist Church for our meeting—medical, not religious. Professor Kent, president of the village Board, gave an excellent address of welcome after which the minutes of the previous meeting were read. Dr. Sheldon of Highland Park read an interesting paper on "Army Sanitation" in which he compared the sanitation of previous years, especially of the Spanish-American War, with the vastly improved methods of the present, and concluded his article with these words: "There has been much written in the journals of late in regard to the typhoid vaccination and the venereal prophylaxis which has been adopted by the Army and Navy. It is too early to make statistics in regard to it, but reports from the English army and our own seem to indicate that it is effective. Venereal prophylaxis is in general use in the Navy and is being used largely in the Army. The Navy reports indicate that venereal dangers are greatly reduced by its use and the opinion in the Army seems to be generally favorable. A separate latrine for soldiers suffering from venereal troubles was provided at Ft. Riley. At this latrine the calomel ointment and argyrol solution for the application of the treatment was placed in a small wall cabinet, the name of the

soldier, time of exposure and time of application of the treatment being recorded. By far the greatest percentage of sickness in the Army is venereal and the Medical Corps is on the alert for any measure for its reduction. An order is being considered and will probably be issued in the Army to make failure in taking the prophylactic treatment, when indicated, a misdemeanor and subject to summary court martial.

I have the greatest admiration and respect for the medical men of the Army and Navy. What splendid battles they have waged against yellow fever, malaria, cholera and the other diseases incident to the countries in which they have worked. It is said that every tie laid in the railroad from Panama City to Colon represented a human life. The Canal Zone now has a lower mortality than many of our great cities. These medical men would be towers of strength in time of war, famine, pestilence or any great national calamity. They are gentle, brave, unassuming but with that trained latent power which fits them to face and solve the great problems which have to do with the welfare of the human race.

The paper was ably discussed by Dr. Ludwig, surgeon at the U. S. Naval Station. Dr. R. C. McCormick of Wauconda then read a paper on "What Medical Schools Don't Teach About Obstetrics," which was as amusing as it was interesting. Dr. Fuller of Wauconda reported a very interesting case of gangrene of the lung in a boy who was kicked by a horse. Dr. Foley operated, removing part of the gangrenous tissue and providing for drainage and although the prognosis seemed almost hopeless at the time, the patient made a good recovery and was exhibited at the meeting by Dr. Fuller with justifiable pride. An interesting discussion of the case followed, participated in by Drs. Foley, Watterson, Gavin and Herschleder.

The secretary then read an article on "The Treatment of Scarlet Fever," by Fischer, published in the July number of *Archives of Pediatrics*.

After an informal discussion by Professor Kent and others of the best way to secure a pure milk supply and to educate farmers on the subject and the decision to make this the main topic at the Wauconda meeting next year and invite the farmers, the meeting adjourned.

The following doctors were present at the meeting: Drs. Foley, McCormick, Herschleder, Sheldon, Galvin, Fuller, Bellows, Jolley, Ludwig, Watterson, Brown, Knight, Shearer, Weichelt and Bouton.

The following dentists were present: Drs. Furbey. Watson and Roberts.

On September 17 occurred the meeting of the Second District Medical Society of Wisconsin, at the Pennoyer Sanitarium in Kenosha, to which our medical society was cordially invited. We first listened to a very interesting and instructive address by Dr. J. B. Murphy on "Diseases and Injuries of Joints," illustrated by a great number of photographs and skiagraphs of cases. The address lasted nearly two hours and was filled with valuable advice and most practical points especially useful to the general practitioner. Dr. Murphy is almost equally famous as a clinical teacher and as a great surgeon.

He was given a cordial vote of thanks by the society. We then gathered in front of the sanitarium, most of us accompanied by our better halves and wore our prettiest smiles while the photographer did his best. We were then treated to a most excellent dinner, about a hundred of us seated at the prettily decorated round tables in the beautiful dining hall. Then came the toasts on the duties of the doctor, respectively to himself, the public, his family, his fellow-physicians and his patients, it being your secretary's painful duty to respond to one, due to the unfortunate absence of Dr. Bergen of Highland Park, who was kept away by his wife's illness. After a few remarks by the President of the Wisconsin Medical Society, the meeting adjourned.

The following members of our society attended: Drs. Bellows, Billmeyer, Bouton, Foley, Gourley, Herschleder, Jolley, Kalowsky, Taylor, Tombaugh, Watterson and Wright.

W. C. Bouton, Secretary.

MONTGOMERY COUNTY.

The August meeting of the Montgomery County Medical Society was held Tuesday, August 23, at Coffeen. The following were present: Drs. Wm. H. Cook, F. W. Barry, H. C. Turney, Z. V. Kimball, L. S. Brown, A. A. McBrien, A. W. Lindberg, J. R. Kenton, W. H. Mercer, P. M. Kelly, F. C. Blackwelder, M. W. Snell, G. A. Sihler, Jr., Ross W. Griswold, R. W. Allen, C. H. Lockhart, W. I. Burns, W. C. Hovey, M. D. Irwin and H. F. Bennett.

Captain M. A. Reasoner, Medical Corps, United States Army, was a guest of the society. The minutes of the previous meeting were read and approved.

In the absence of two members of the program committee, the president appointed Drs. Brown and Hovey to act with Dr. Blackwelder in fixing a place and date for the next meeting. The committee recommended that the next meeting be held at Chautauqua Park, September 10, and that the day be devoted to a scientific program, dinner and a day's outing. They also recommended that each member be assessed $2.00 to defray the expenses of the day. The report of the committee was unanimously approved.

Moved and seconded that a committee of four be appointed to arrange for the picnic. Carried. The president appointed as members of the committee, L. S. Brown, Z. V. Kimball, M. W. Snell and H. F. Bennett.

Applications for membership of A. A. McBrien, Ross W. Griswold and Millard D. Irwin were presented. After being approved by the board of censors, all were elected to membership.

Dr. Chas. H. Lockhart presented the paper of the evening on "The Management of Normal Labor." This paper was a most worthy effort, and we regret that we are unable to publish it in the *Bulletin*. A general discussion lasting an hour and a half indicates the interest this paper aroused. Meeting adjourned.

After the meeting, the members of the society were the guests of the Coffeen profession at a luncheon, which was most enjoyable.

MORGAN COUNTY

The regular monthly meeting of the Morgan County Medical Society was held Thursday, September 12, at Jacksonville, Ill. Dr. A. L. Adams gave a most instructive address on "Sinus Infections," which was amply illustrated by stereopticon views. Dr. Towne of the State School for the Feeble-Minded at Lincoln, was present and spoke of the "Binet System." Dr. J. A. Ogram presented a case of Hodgkins Disease, which is an enlargement of the Lymphatic Glands. This is a disease seldom experienced in Jacksonville.

WHITESIDE COUNTY

The meeting of the Whiteside County Medical Society was held Wednesday, September 11, at Erie, Ill., the general subject of the meeting was on "Diseases of the Kidney." The following is the program: "Indications for Nephrectomy," Dr. Sullivan; "Differential Diagnosis of Coma," Dr. Perry; "Early Diagnosis and Treatment of Chronic Nephritis," Dr. Horner; "Significance of Blood in the Urine," Dr. Keefer; "Relation of Nephritis and Cardio-Vascular Diseases," Dr. Tascher; "Treatment of Floating Kidney," Dr. Beard; discussion was opened by Drs. Farley, Diamond, Johnson and Mathew.

WINNEBAGO COUNTY

The Winnebago County Medical Society opened its fall and winter sessions September 11 in the Nelson House at Rockford. Dr. Anna Weld told of her tour and study visit in Vienna, of the great hospitals there and the vast amount of clinical material furnished both at the hospitals and the free dispensaries.

Dr. Fringer told of the practices of the great London hospitals in the ophthalmic lines and the abundance of material for their clinics.

Drs. Helm and Gill and others recited the methods and practices of American Hospitals. As many physicians had visited the Mayo Brothers at Rochester, Minnesota, the merits of this now world wide institution were fully discussed.

NEWS OF THE STATE

NEWS ITEMS

—The Chicago Lying-In Hospital is to have a new building to cost $40,000.

—Dr. E. J. Higgins has been appointed county physician of Will County.

—The Elgin Physicians' Club held its first meeting September 8, and has arranged for a busy season.

—The Swedish-American Hospital Association of Belvidere is arranging for a hospital to be built in that city.

—Dr. James Race of Jerseyville was seriously injured by a ferocious bull while separating cattle on his farm.

—Dr. George T. Palmer announces that he will open a tuberculosis hospital near Riverton, which will be partially charitable.

—A hospital for the treatment of consumptives will be opened next month at Belleville. Patients will be treated free of charge.

—Dr. Clarence E. Pierce of O'Fallon, Ill., is in a critical condition from tetanus contracted from a patient who died of that disease.

—It is said that Dr. J. R. Allen of Waterloo, Ill., is being sued for $10,000 damages by a patient for being burned by an *x*-ray machine.

—Dr. S. M. Green of Dixon has been indicted by the Lee County grand jury charged with murder and released on a bond of $12,500.

—A hospital will be erected at Sycamore to be known as the Red Granite Hospital, with a capacity for twenty persons and an operating room.

—Dr. E. E. Gordon has withdrawn as a candidate for coroner of Alexander County, and Dr. Henry A. Davis has been named to fill his place.

—A suit for $40,000 damages has been filed against Drs. T. W. Bath and W. M. Young, both of Bloomington, the plaintiff alleging malpractice.

—A receiver has been asked for the Sulphur Springs Sanitarium of Peoria, of which Dr. E. W. Oliver is superintendent and Olive M. Oliver is secretary.

—William H. Dyer, a colored man of Lincoln, who graduated from the high school of that city, will enter the College of Physicians and Surgeons in Chicago.

—The will of the late Dr. C. F. Hough of Champaign has been filed for probate. He leaves an estate valued at $10,000, all of which is bequeathed to his widow.

—The contract for the new Decatur and Macon County Hospital has been let to Baker Brothers of Decatur on the percentage plan of 4 per cent. It is estimated that the cost of the building will be over $100,000.

—Dr. George T. Palmer, city superintendent of health of Springfield, has gone to Washington, D. C., where he will deliver an address before the American Public Health Association on the subject, "A Diagnosis of a Sick City."

—Dr. J. W. Pettit of Ottawa, gave an address on tuberculosis at the McLean County farm September 11. The object of this was to call attention of the citizens of that county to the necessity of an institution for the care of consumptives.

—A city nurse has been installed in the city hall building at Kewanee and supplied with sheets, pillow-cases and gowns, etc., to be used in her rounds. The first six weeks proved the need of such an office, as she was called 130 times in that period.

—Peter Bartzen, president of the Cook County Board, after investigating the charges that Dr. E. S. Moore, who has been at the head of the tuberculosis hospital at Dunning, had mistreated his patients, accepted the resignation of the physician.

—Dr. J. F. Percy of Galesburg was in Fairfield, Iowa, Tuesday, September 17, where he attended the dedication of the Jefferson County Hospital. Dr. Percy delivered the principal address on the subject, "The Rôle of the Hospital in the Prevention of Diseases."

—Dr. Carrie Noble White has presented the Urbana Free Library with the medical library of her husband, the late Dr. James S. White, a former Urbana physician, who at the time of his death in Springfield, Ill., was Supreme Medical Director of the Court of Honor.

—Dr. Louise N. Miller, a well-known lady physician of Moline, has filed suit against the Lee family of that city, alleging that they conspired to sell her worthless stock in a banana food company. The bill alleges that Esther Lee was represented as a spiritualist medium who gave messages from the spirit world to Dr. Miller from her deceased husband, advising her to purchase stock.

—A banquet was given Dr. L. R. Ryan of Galesburg, who will leave soon to locate in San Diego, Cal. A large number of the medical men of the city attended and presented Dr. Ryan with a solid gold watch as a token of esteem. Among those who spoke were Dr. Quaife, president of the Galesburg Society. Dr. William O'R. Bradley acted as toastmaster. Others speaking were Drs. J. F. Percy of Galesburg, Becker of Knoxville, and Matheny, Lambert and Stotts.

PERSONALS

Dr. L. R. Ryan has removed from Galesburg to San Diego, Cal.

Dr. L. B. Farrar of Pontiac celebrated his 90th birthday August 29.

Dr. Jay Bacon of Peoria has gone abroad for a three months' vacation.

Dr. Frederick Tice, Chicago, was operated on for appendicitis, Aug. 6.

Drs. Joseph Welfeld and David Horovitz, Chicago, have returned from Europe.

Dr. Isaac A. Abt of Chicago announces the removal of his residence to 4810 Kenwood Avenue.

Dr. Zahn of Roberts Ill., has departed to take a postgraduate course in several medical centers.

Dr. H. V. Dehming of Cumberland, Md., will locate at Graysville in the Dr. Glaze property.

Dr. R. J. Coultas of Mattoon, has purchased valuable business property on Broadway in that city.

Dr. Ross Griswold of Litchfield was appointed a physician for the poor by the County Board of Supervisors.

Dr. and Mrs. Arnold Klebs, formerly of Chicago, but recently of Switzerland, will spend part of the winter in Chicago.

Dr. W. S. Howell of Winnebago has gone to Arizona for the benefit of his health. He has been suffering with a nervous breakdown.

Dr. C. A. Sherman of Laura, Ill., has sold his practice to Dr. A. H. Wadsworth of Chicago, who will take up his practice in that city.

Dr. George Weber of Olney delivered an interesting lecture on "Hygiene" at Grayville, Monday, September 9.

Dr. Harry R. Carson, who has been practicing in Princeton for the last two years, has removed to Hornell, N. Y., where he has accepted a position as assistant superintendent of the Steuben Sanitarium.

REMOVALS

Dr. Secker, of Tolono, has removed to Champaign, Ill.

Dr. L. C. Miller has removed from Rantoul to Champaign.

Dr. J. A. Ross has removed from Moline to Eldridge, Iowa.

Dr. Lawrence R. Ryan has removed from Galesburg to San Diego, Cal.

Dr. George C. Kardon, of Robinson, Ill., has removed to Michigan City, Ind.

Dr. E. C. Park, Jr., has removed from 1208 E. 63d Street, Chicago, to Flora, Ill.

Dr. T. J. Lamping has removed from Moline, Ill., to 435 Greenwood Avenue, Chicago, Ill.

Dr. Philip Hay has removed from Woodstock, Ill., to 60 Washington Square, New York, N. Y.

Dr. Arthur L. Meyer has removed from 3203 Clark Street, Chicago, to 706 Huntington Avenue, Boston, Mass.

NEW INCORPORATIONS

Dr. B. F. Roller, Chicago, $10,000; maintain a sanitarium. Incorporators, B. F. Roller, C. E. Zimmerman and Jesse Lowenhaupt.

Solar-Pathis Institute and Sanitarium, Chicago, $10,000; maintain an institute and sanitarium. Incorporators, William McHenry Andrews, Henry Morton and Edwin H. Lee.

MARRIAGES

Ernestine Doychert, M.D., and Lionel E. Lawrence of New York City, August 13.

Isaac John King, M.D., to Miss Annette Elizabeth Green, both of Chicago; July 25.

William S. Bougher, M.D., to Marian S. Walker, M.D., both of Chicago, August 28.

Walter Bradford Metcalf, M.D., Chicago, to Miss Anna M. Jump of Houston, Del., August 28.

Charles Oliver Bulger, M.D., Greenfield, Ill., to Miss Pauline Smith of Fayette, Ill., at Chicago, August 14.

The marriage of Earl Caddick, M.D., and Miss Harriet Porter, both of Quincy, took place on July 25, at Burlington, Iowa.

The engagement has been announced of F. M. Rose, M.D., of Rantoul, to Miss Julia Hess, of Homer, Ill. The wedding will take place September 26.

C. O. Buis, M.D., of Fairfield, Ill., was married, Sept. 2, 1911, to Miss Ruth Stewart of Lebanon, Ind., they having kept their marriage a secret for almost a year.

The engagement of W. H. Weirich, M.D., of Jacksonville, Ill., to Miss Virginia Walker, of Waterloo, Iowa, has been announced. The wedding will occur in October.

Joy Ricketts, M.D., for three years a member of the medical staff of the South Bartonville Asylum, was married, September 4, to Henry B. Carriell, superintendent of the State Asylum for the Insane at Jacksonville. The wedding took place at Batavia, Ill., at the home of Dr. Daniels.

DEATHS

Mrs. J. D. Colt, wife of J. D. Colt, M.D., of Litchfield, Ill., died suddenly at Buchanan, Mich., September 1; age 72 years.

N. E. Shanahan, M.D., formerly a resident of Salisbury, Ill., died at Denver, Colo., August 26, of tuberculosis. He was 43 years old.

B. Flannagain, M.D., died at his home in Carrollton, Ill., September 3, after an illness of several months' duration of paralysis; aged 72 years.

W. T. Bellomy, M.D., of Pleasant View, Schuyler County, died at his residence, August 18, after an illness of two years; aged 50 years.

Brock Mayfield, M.D., a retired physician residing near Jacksonville, died Sept. 12, 1912. He was a graduate of the St. Louis Medical College, and had been residing on a farm for a number of years.

C. Taylor Ball, M.D., of Decatur, died suddenly at his home, Friday, August 23, of acute kidney trouble. He was born in Batavia, Ill., Oct. 11, 1854, and is survived by his widow, one son and daughter.

The funeral of Francis H. Fisk, M.D., who died at Nashville, Tenn., was held at Olney, Ill., Sept. 16, 1912. Dr. Fisk was born at Cincinnati, Ohio, in 1836, and graduated from the Eclectic Institute in that city in 1857. He practiced for a time in Olney.

C. F. Hough, M.D., died suddenly at his home in Champaign, September 9, aged 50 years. Death was due to apoplexy. Dr. Hough was born in Martinsburg, N. Y., and graduated from Hahnemann Medical College at Cleveland, Ohio. He is survived by his wife and three children.

W. C. Manley, M.D., died at his home in Franklin, Ill., September 10, from heart disease; aged 63 years. He was a graduate of the American Medical School, St. Louis, Mo., in 1879, and has practiced in Franklin ever since. The deceased is survived by his wife and two children.

Warren H. Hunter, M.D., of Chicago, chief coroner's physician, died at the West Side Hospital, September 5, from blood-poisoning contracted, it is believed, by infection of his hands through the constant handling of bodies while making post-mortem examinations. He was 45 years of age.

Book Notices

A Text-Book of Practical Therapeutics. With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourteenth edition, thoroughly revised. Octavo, 984 pages, with 131 engravings, and 8 full-page colored plates. Cloth, $4, net. Lea & Febiger, Philadelphia and New York, 1912.

Fourteen editions in less than twenty-two years expresses the appreciation of this work by medical men throughout the world. It is strictly up to date, contains valuable instruction regarding the treatment of syphilis by salvarsan; of aneurism by the silver wire method, and of neuralgias by the introduction of alcohol into the foramen. Hare's work has the advantage of being reliable and appeals to common sense, the best recommendation which could be given a work on this subject.

The Pathology of the Living. And other essays. By B. G. A. Moynihan, M.S. (London), F.R.C.S., Honorary Surgeon to Leeds General Infirmary; Professor of Clinical Surgery at the University of Leeds, England. 12mo of 260 pages. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $2.00 net.

In this small work of 260 pages, Mr. Moynihan considers a number of subjects of vital interest to the medical profession. This is particularly true in his essay on the Pathology of the Living, which will be found to open up a new viewpoint of the consideration of diseases. Members of the State Society could do no better than to read this book through from the first to the last page.

Dislocations and Joint-Fractures. By Frederic Jay Cotton, A.M., M.D., First Assistant Surgeon, Boston City Hospital. Octavo of 654 pages, 1201 original illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $6 net; half Morocco, $7.50 net.

Professor Cotton's work, which embraces only Dislocations and Joint Fractures, is in a way unique, in that it meets this most difficult subject along altogether special lines, and opens a new field for the general practitioner. Dr. Cotton takes a conservative stand on operative treatment of fractures and dislocations but one which must commend itself to those who are looking to the best interests of the patient at all times. Certain it is, that the advice often given "to operate on all fractures" is not good at this time. The book is handsomely bound and illustrated and can be commended to our readers as strictly up to date and reliable.